The UNESCO Courier

A window open on the world

February 1975
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OUR HIDDEN MINERAL RESOURCES

Special supplement on Unesco

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TREASURES OF WORLD ART

International Women's Year

96 *GREECE*

Cretan beauty

With her jaunty air, tip-tilted nose and full lips, this Cretan girl painted 3,500 years ago in a fresco on a wall of the palace of Knossos exudes youth and vitality. Her lively individuality of expression has perhaps more than a suggestion of modern woman, intent on claiming her rightful place in society. She may have been a lady at the court of the Cretan rulers, whose palace was destroyed by fire around 1400 B.C. Though Cretan civilization then declined, it had already exercised a powerful influence on ancient Greece, especially in the field of art. The painting fragment is now in the museum at Iraklion, capital of Crete.

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Cover

As the world's need for minerals increases, man faces a crucial problem of locating and tapping new deposits of natural resources such as iron ore, manganese, chrome, copper, gold, etc. Our photo shows a piece of natural gold, remarkable for its shape and size (enlarged four times on cover). Discovered in central Rumania, it is now in the Mineralogy Museum of the University of Paris VI. The seas and oceans contain vast reserves of minerals. Scientists estimate that if all the gold contained in sea water could be extracted, there would be more than a ton for each person in the world. See article page 27.

Photo © Nelly Bariand, Paris

A white mosque of simple beauty at Kairouan, a central Tunisian city founded in 670 A.D. Its cupola is typical of Islamic religious architecture. Elsewhere in Tunisia, such cupolas are found only on the island of Djerba (see following pages) as a characteristic feature of traditional architecture in village houses and other buildings.

Photo © André Martin, Paris

ARCHITECTURE WITHOUT ARCHITECTS

The timeless art of building in Tunisia: the first of a series of Unesco studies on traditional architecture in Africa and Asia

by Wolf Tochtermann

EVERY part of the world has a form of architecture which is rarely mentioned in encyclopaedias or scholarly works and which is given only marginal treatment in the history of building and architecture. And yet this traditional or indigenous architecture as it is sometimes called, boasts an extraordinary wealth of expression, that differs widely from country to country.

It is not associated with any architects, for the simple reason that architects have had nothing to do with it. It is not a product of the drawing-board, nor does it follow the rules and canons laid down and taught by art schools and universities.

It is not only the fruit of ancient traditions and the skill of its builder-occupiers (for it is essentially "do-it-yourself" building), but in every case it mirrors the structure and way of life of a specific society. Architecture of this kind makes wise and efficient use of available local materials, and is perfectly adapted to climatic conditions.

It is only in the last few years—perhaps since the famous 1964-65 exhibition organized by the New York Museum of Modern Art on the theme "Architecture without Architects"—that architects, weary of the "international style", sociologists, ethnologists and geographers have come to recognize the importance of this hitherto unknown, or at least little-known, form of architectural expression.

The few studies previously devoted to the subject by a handful of specialists had had very little influence, and some specialists only began to show an interest in the conceptual originality of this vernacular architecture when they became aware of the dangers involved in the indiscriminate use of an all-purpose style of architecture, whose enthusiasts advocated its application in every latitude and climate.

It has been noted that buildings that derive from rural traditions remain extraordinarily efficient as dwellings, because they are directly related to an economy and a way of life still very much alive in many rural areas. It is far easier to see the relationship between environment and habitat in these dwellings than in the case of the big-city architecture of Western countries.

The architectural forms and ex-

CONTINUED PAGE 7

WOLF TOCHTERMANN, *German architect and town-planner (Fed. Rep. of Germany) has been in charge of Unesco's programme of architecture and the environment in the Dept. of Culture since 1969. He is concerned in particular with the education of architects and town planners and with research into traditional architecture in the context of development.*

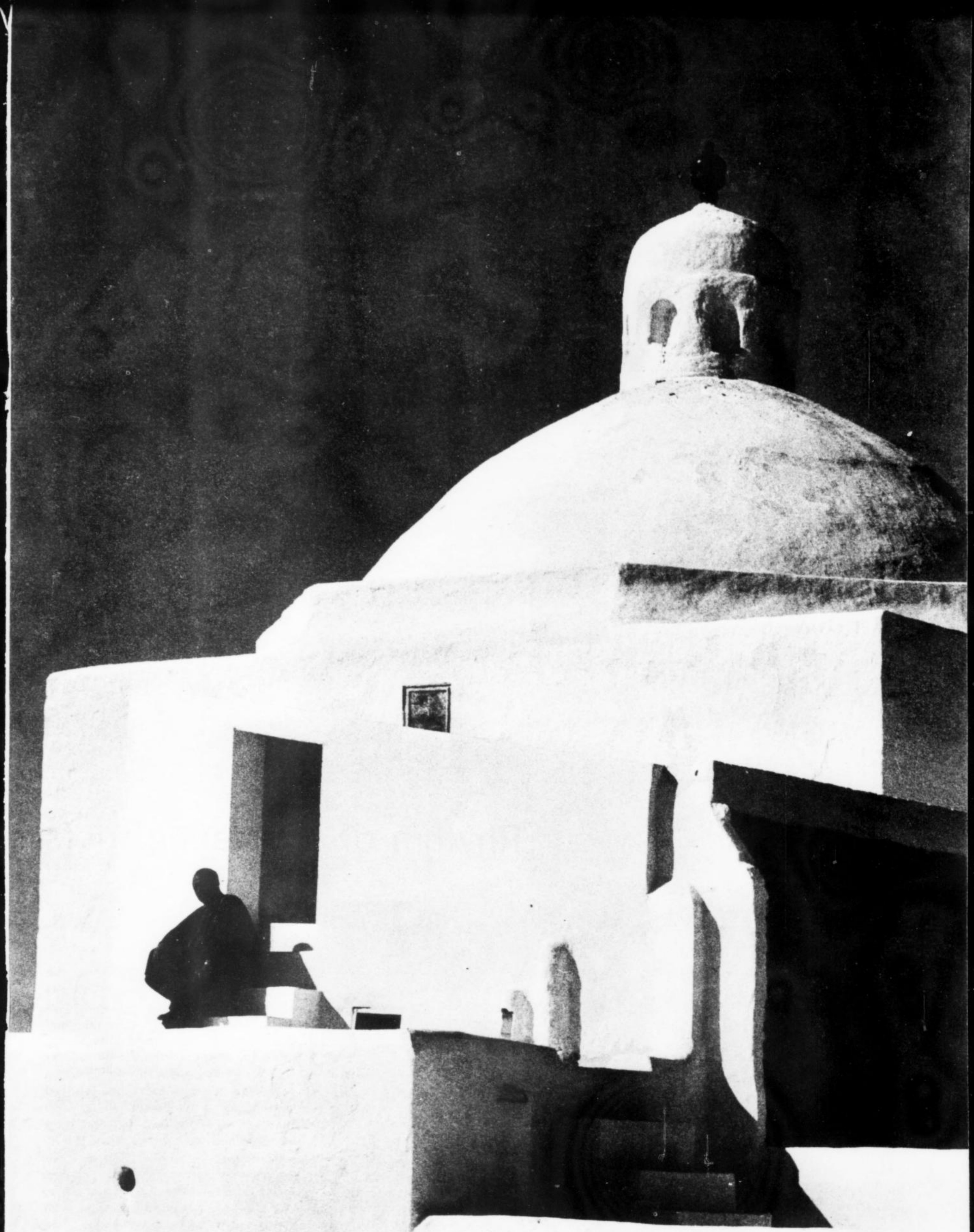

Photo © Fulvio Roiter, Venice

Rhythm of undulating roofs

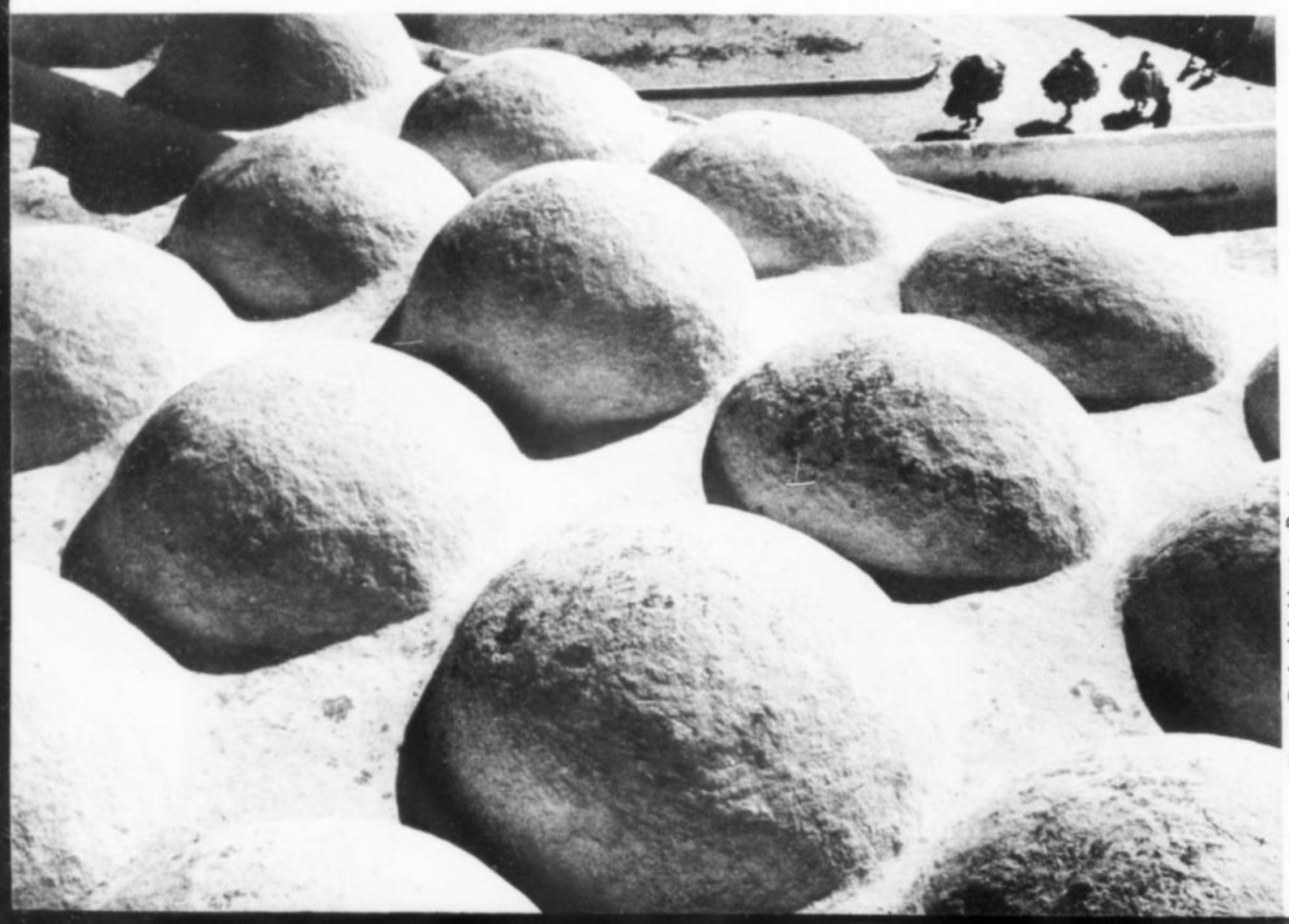

Photo © André Martin, Paris

The low, flat island of Djerba in the Gulf of Gabes (south east Tunisia) has many gardens and orchards that drink from thousands of wells and storage tanks. A diversity of mosques, (above and right) spread their admirable architecture and blindingly white outlines across its landscape. Vaulted roofs give a particular rhythm to Djerba's architecture. Some are multi-domed, as on the public baths seen at left. Standing among olive groves and date palms are 2-storey white houses also capped by cupolas. The two small rooms are thus well protected from heat and cold. The layout of the traditional-style house is designed above all to maintain the intimacy of family life.

pression of these buildings are not dictated by a striving for aesthetic effects. They are determined by a profound though often quite unconscious understanding of the landscape and a judicious use of locally available materials. The builder-occupier's construction reflects his social and cultural needs and establishes a balance which, however precarious, is nevertheless a real one, between his dwelling and the natural environment from which he has to provide a shelter.

Yet today, this indigenous architecture, an expression of the outstandingly rich cultural heritage of many countries in Asia, Africa, Latin America and Europe, is seriously threatened. Over the last few years many splendid examples have disappeared or are in the process of doing so.

Since it is basically a rural architecture, its disappearance is geared directly to the speed of urbanization and the depopulation of rural areas, as in villages in the valley of Verzasca in southern Switzerland and Berber villages in the south of Tunisia, among many other places.

In 1973 Unesco launched a number of studies on traditional architecture, particularly in African countries (Tunisia, Cameroon, Ghana, Senegal, the Central African Republic, the People's Republic of the Congo). Further studies are to be carried out in Asia.

Missions of architects have been sent to various countries to carry out surveys and prepare photographic and written reports. Unesco intends to publish all these works in a series under the general title of *Studies on Traditional Forms of Architecture*.

The first study in the series, prepared by a French architect, Claude Perron, is devoted to Tunisia.

Situated between the Mediterranean and the Sahara, Tunisia has been subjected to a wide variety of outside influences, through its maritime links with the countries of the Middle East and of Europe, and its lines of communication with Africa south of the Sahara across the formidable yet by no means impassable barrier of desert wastes.

Tunisia has also known both the ebb and flow of a nomadic population, at certain times extending over a large part of the country, and the growth of settlements in areas with the most favourable climatic conditions. The impressive variety of Tunisian dwelling-places is thus largely explained by these contrasting ways of life.

In his study, Claude Perron points out that the history of North Africa is marked "by the struggle of the nomadic peoples of the steppes and desert against the settled populations of the wealthy coastal areas and the oases." This struggle has given birth to the different types of houses found in Tunisia.

Today, when nomadism is on the wane and settlement is more widespread, the groups of tents that were once set out so as to form temporary villages have disappeared, although the individual tent is still found in almost every part of the country. In some cases it serves as a kind of annexe to the home of a newly-settled family. The forms of these family dwellings, like all traditional architecture, in Tunisia and elsewhere, are determined by the nature of the local terrain and the climate, the nature of farming and animal rearing, historical events such as occupation and outside cultural influences, or sociological factors such as the structure of family and community life.

The author of the Tunisian study describes many examples of huts constructed of branches or reeds, of circular houses with conical roofs, of square or rectangular houses with pointed or flat roofs. Some dwellings have attained their purpose to per-

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Photo © André Martin, Paris

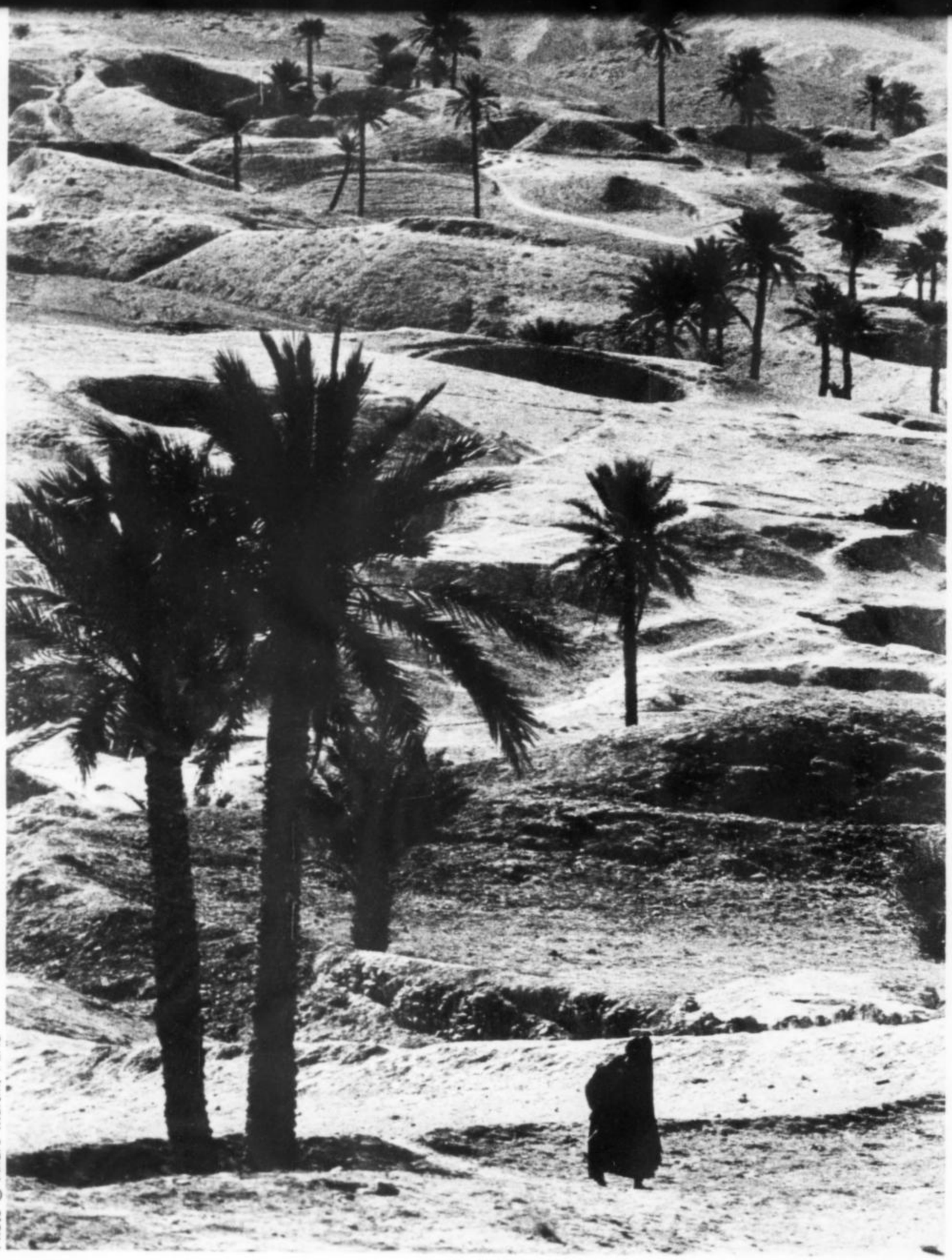


Photo © André Martin, Paris

Troglodyte farms and herdsmen's dwellings

Photo © Fulvio Roiter, Venice

One of southern Tunisia's most astonishing landscapes is in the plain of Matmata which runs to the foot of the heights of Djebel Dahar (above and left). People and animals come and go across a lunar-like countryside dotted with palms... and suddenly vanish as if the earth had swallowed them. There is a simple explanation. Having no hard and durable building materials, the local people have dug out homes (up to 50 metres long) in the soft alluvial soil. Craters criss-crossing the countryside are in fact patios around which the rooms of the underground houses are set. Round or square, and up to 8 metres deep, the patios are reached via tunnels along which stables for animals have been excavated. Cooking is done in the patio while the rooms around it, white-washed and shaped like the hull of a boat turned upside down, are used as living quarters, storehouses or workshops. When the ground is suitable, houses also have a granary, with access through a hole at ground level by means of a rope or ladder of branches. These houses, with their many amenities, cool in summer and warm in winter, are still made by their inhabitants. Communities of cattle breeders and shepherds in the nearby mountains have a different kind of architecture. Right, the village of Toujane with its houses built of stones from the rocky soil.

Photo © André Martin, Paris

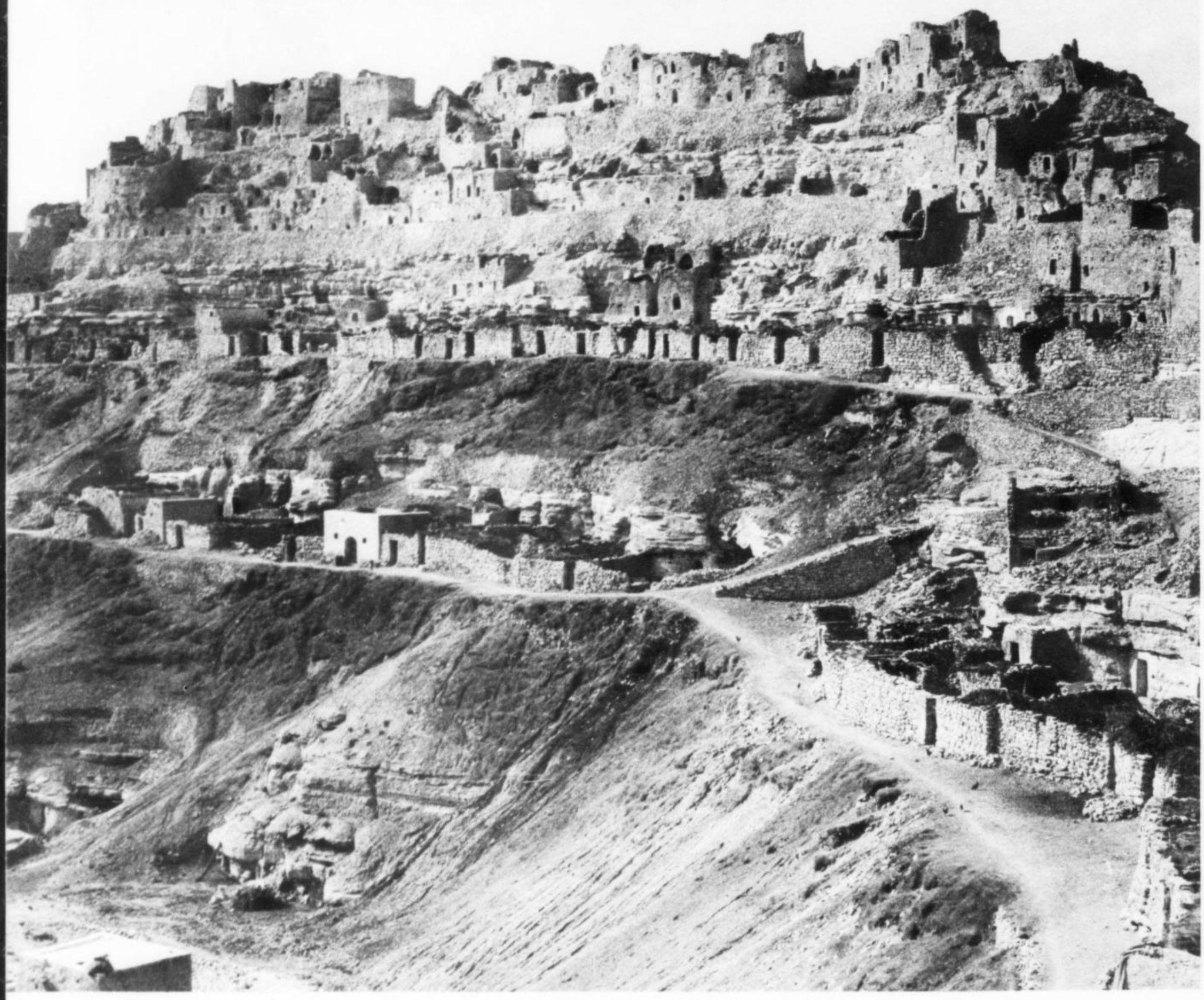


Photo Claude Perron - Unesco

fection: various family-sized defensive structures and highly functional dwellings such as the "menzels" on the island of Djerba. Among the wide variety of materials used are fabrics, wood, matting of reeds and straw and other materials derived from plants, bricks of mud and earth and unmortared stone.

The study examines not only individual buildings, but offers examples of groups of dwellings set in compounds or of villages each with installations appropriate to their needs. In almost every case the author shows that the forms of traditional architecture are not an accidental choice but on the contrary are the logical answer to certain specific needs, which can vary from one region to another.

Why then is Unesco carrying out these studies? They might quite justifiably have been undertaken to prepare for later work of preservation. They might too have been considered worthwhile from the viewpoint of historical documentation. However, Unesco's reasons for carrying out these studies were quite different.

The world's population is likely to double within the next thirty years if the present rate of growth continues, in which case additional housing will need to be provided for 3 to 3.5 billion persons. Since urban expansion is far outpacing that of rural communities, new technologies will have to be used in order to meet this unprecedented demand for housing more efficiently and economically.

However, the building techniques habitually used in Western style architecture often call for materials which are difficult to obtain in the developing countries, and are therefore beyond these countries' economic means. Moreover, such materials are rarely suited to the specific climatic, social and cultural conditions in these countries.

In future, therefore, there can be no question of despising cheap building materials such as clay bricks, moulded clay or bamboo. Nor is there any reason to consider traditional building materials as a mark of underdevelopment.

On the contrary, the merits of traditional architecture must be made clear to architects, urban planners and government officials in order to promote the rise of an architecture that is not merely an imitation of Western industrial construction. In the same context, traditional architecture should occupy an important place in the programmes of architectural colleges in the developing countries. The renaissance of this type of architecture would also prevent the appearance of shanty-towns and other blights of urban housing.

It is with such needs in mind that Unesco has launched its studies on traditional architecture in different parts of the world.

■ ***Wolf Tochtermann***

The citadel granaries

The unusual structures shown here are "ghorfas" (granaries) once used as storehouses for grain, oil and other produce by the semi-nomadic peoples of southern Tunisia—farmers or shepherds according to the season. Left in the care of a few guardians for part of the year, ghorfas were often built on rocky mountain spurs and grouped defensively to form a "ksar" (the Arabic word for fortress or citadel). Tiers of ghorfas top the hill at Chenini (photo left) and below them homes have been hollowed out in softer ground. These particular dwellings blend into and even accentuate the natural outlines of their setting. Fortified granaries are also found in the plains of southern Tunisia as at Medenine (below). They consist of small rectangular cells with barrel vaults on which an identical unit is often superimposed (right). Designed for the needs of a semi-nomad way of life, each cell held the food reserve for a single family, during whose absence the entrance was walled up. Buildings of great stylistic beauty, the storehouses are mostly abandoned nowadays although groups of them have been converted into hotels.

Photos © André Martin, Paris

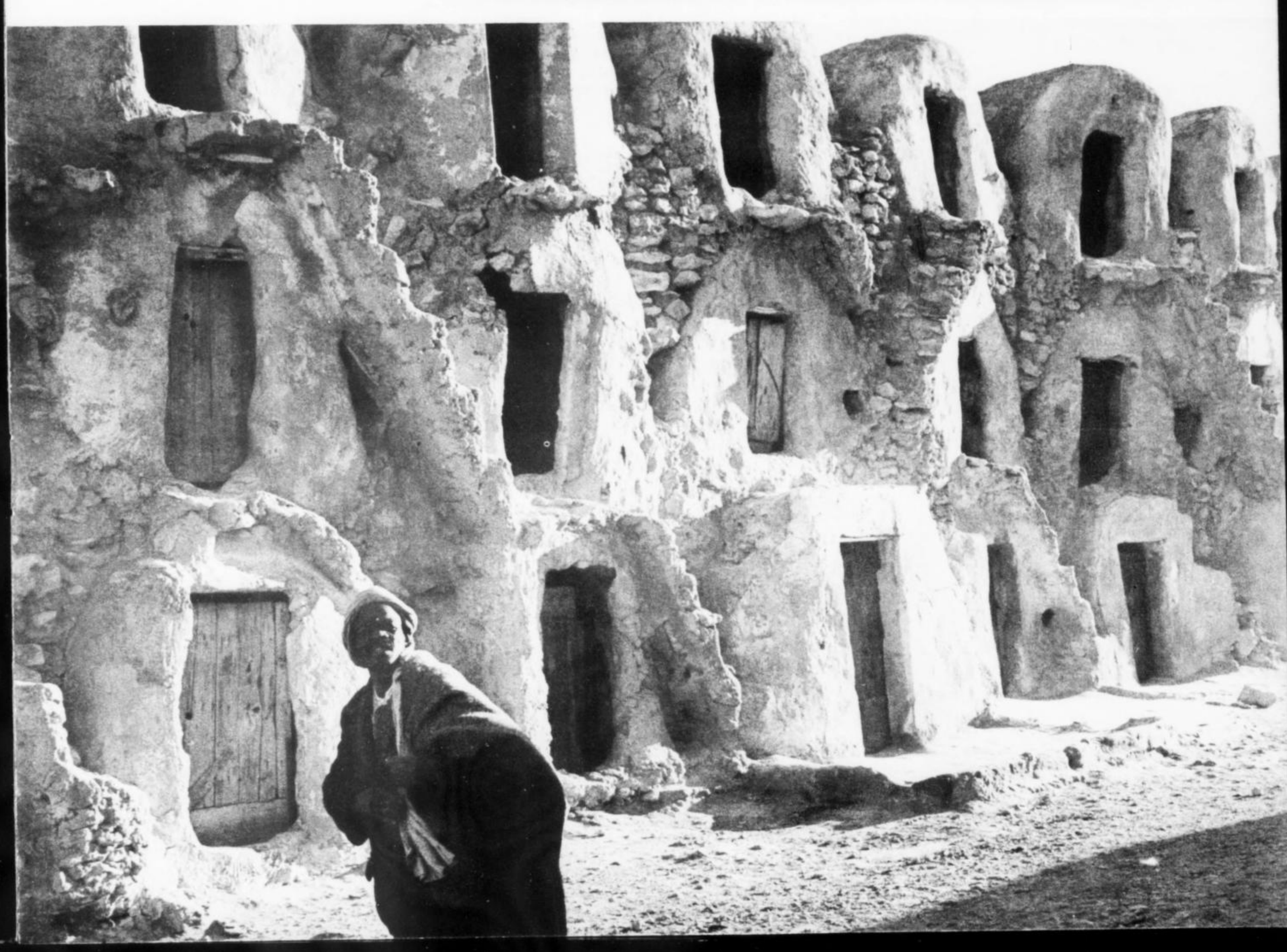
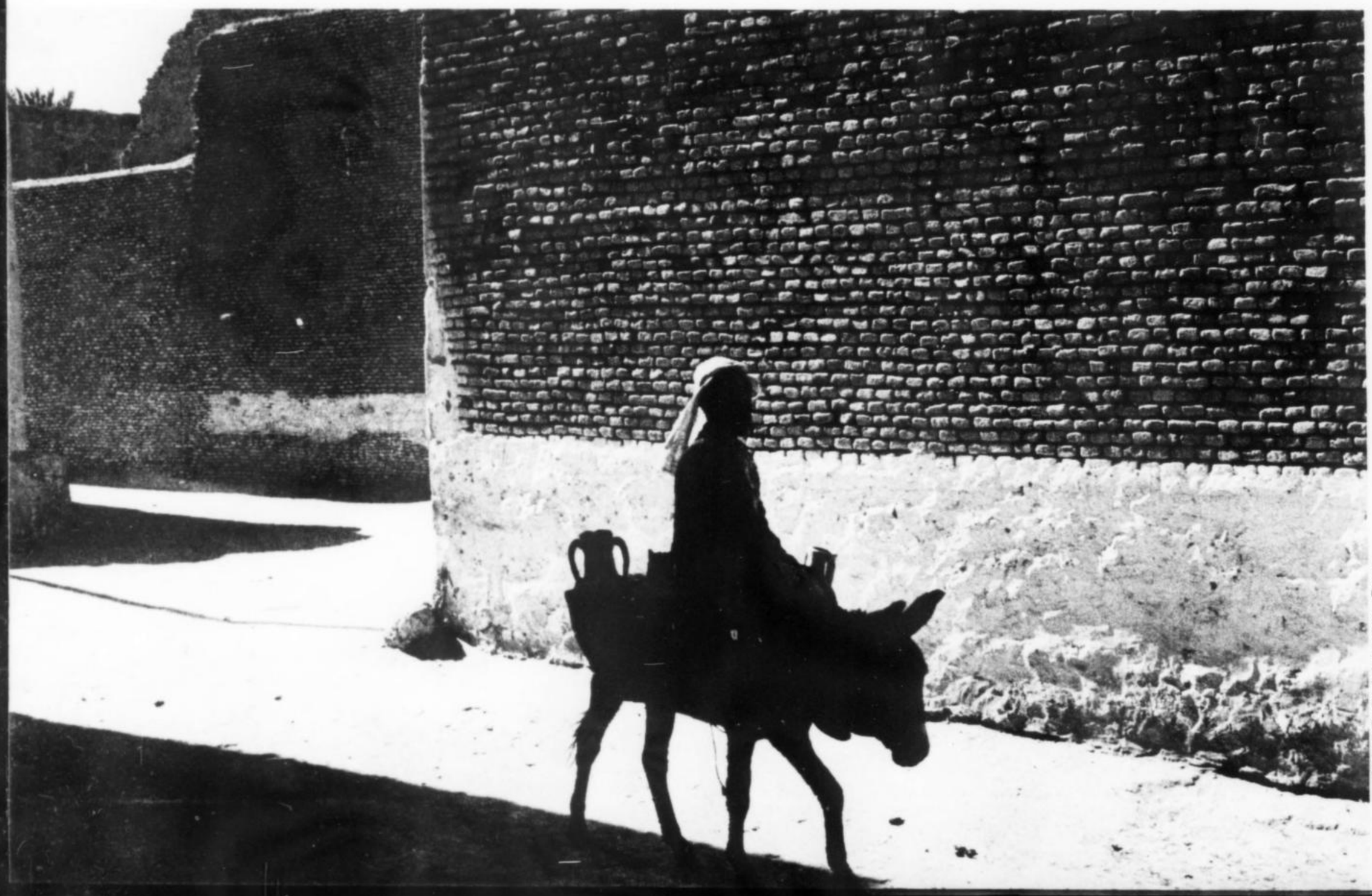


Photo © Fulvio Roiter, Venice

Photo Claude Perron, Unesco

Nomad homes and oasis cities

The nomad builds his dwelling with the produce of his flocks—sheep's wool and goat or dromedary hair woven into long strips and sewn together into a large rectangle. With a few pieces of wood as tent pegs and brushwood to make it draught-proof around the bottom, this mobile dwelling is quickly erected and just as quickly taken down. It is easily transported by dromedary or donkey along with the household utensils and the handsome carpets woven by womenfolk. Above, a traditional Tunisian tent pitched with its entrance facing Mecca. In harmony with the landscape and solidly anchored to the ground, the tent shown here is a habitat that serves its purpose to perfection. After crossing vast windswept desert wastes, a traveller experiences a feeling of relief on reaching the oases of the Djerid region of southern Tunisia. Below, a street in one of these oases, at Tozeur (12,000 inhabitants) whose large houses are faced with straw coloured bricks. Openings of ventilation shafts for drying dates —Tozeur's main product—are seen at top of photo. Right, aerial view of Thysdrus, an ancient Roman city lying between Sousse and Sfax, and today called El Djem. Its enormous third century amphitheatre, which could accommodate 60,000 persons, dominates the present city's typically Tunisian buildings.



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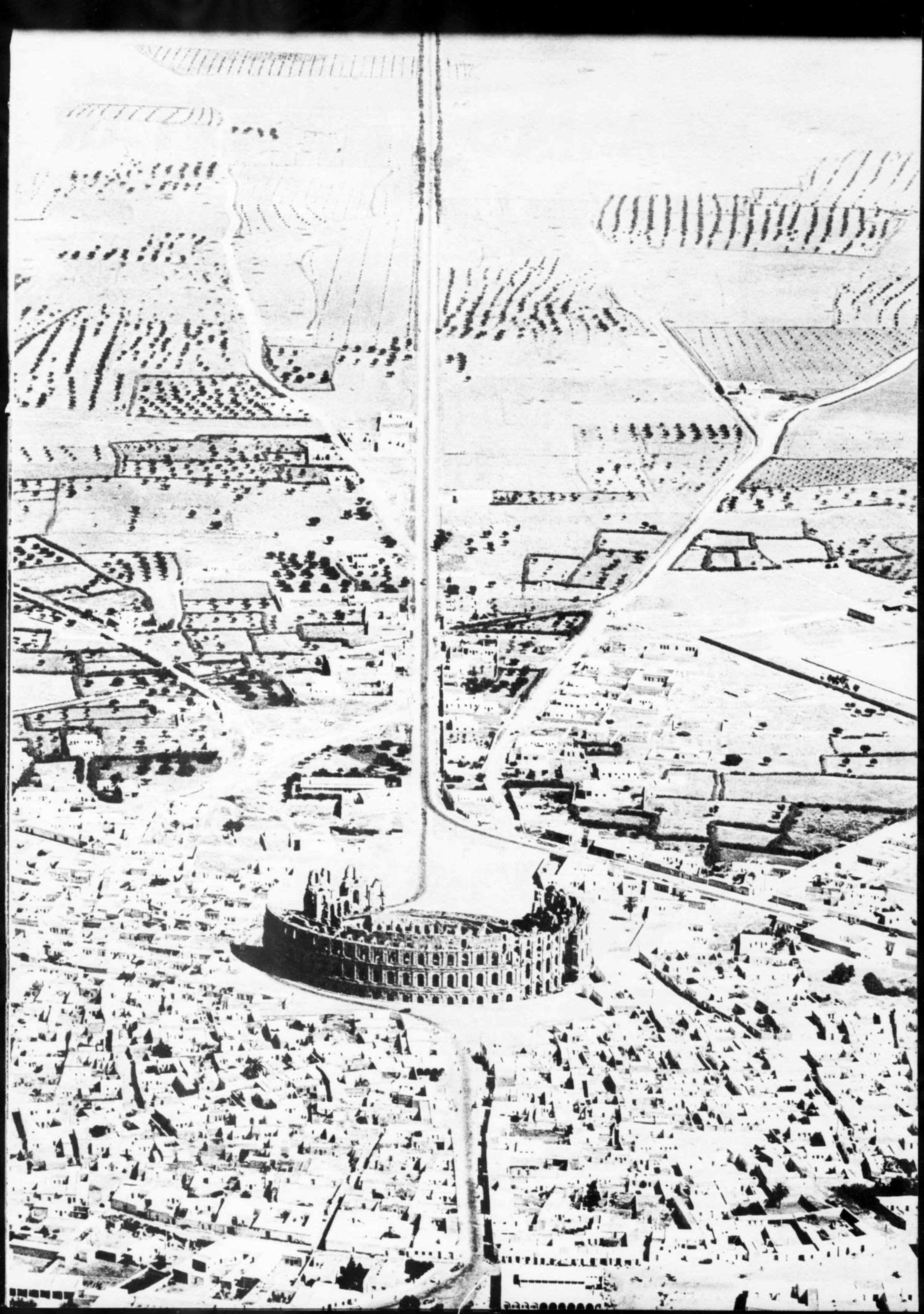

AMADOU MAHTAR M'BOW

A PROFILE OF THE SIXTH DIRECTOR-GENERAL OF UNESCO

by Pierre Kalfon

NINETEEN fifty-three. Senegal is still a French colony. In the village square at Badiana, deep in the bush of the Casamance region, a man addresses the villagers.

He speaks of the need to learn to read and write, to observe simple rules of hygiene in order to prevent disease; he explains that green manuring yields more rice, that animals should be vaccinated and that infant mortality is not inevitable. He tells the villagers not to be ashamed of Africa's past. He speaks of dignity and hope. . .

If the assembled villagers listened so intently, it was not only because they were fascinated by his words. It was because this time it was a black African, and not a Frenchman from the town, speaking to them about themselves in clear and simple terms. This Senegalese, a graduate from the Sorbonne, was a school teacher of a new kind. His name was Amadou Mahtar M'Bow. On November 14, 1974, he was elected Director-General of Unesco by the representatives of 135 countries assembled in Paris. He had jumped a century.

Shortly after he was born in Dakar, in 1921, his parents took him back to Louga in the Sahel, where the rest of the family lived, the extended African family of uncles, aunts, grandparents and cousins. There he grew up, "learned about life", had brothers and sisters to whom he was the elder brother and, above all, first learned from practical experience and later from books, as Jean-Jacques Rousseau once proposed. Louga was at that time a small rural community with a population of hardly more than 5,000, situated at the cross-roads of the Wolof, Peul, Toucouleu and Berber settlements of Senegal.

His father, who came from a village near the coastal town of St. Louis, was, like many other villagers, an artisan and farmer. He worked hide and made leather goods, cultivated his field, and kept a few sheep, cattle and horses. A devout and highly esteemed Moslem who read the Koran and strictly observed the fast of Ramadan, he was respected as much for his moral uprightness as for his imposing physical stature. Visiting Senegalese political leaders always stayed at his house, and as a prominent local figure, he had been a member of the Senegalese delegation invited to Paris for the Universal Exhibition in 1900.

Amadou Mahtar M'Bow spent his childhood and adolescence in a protected yet liberal atmosphere: he played to his heart's content with the other children of his age to the rhythm of Wolof fable-songs, absorbing his cultural heritage in this way: he listened spellbound to the legends and tales of marvellous happenings whose animal characters parodied man, his faults and his qualities.

He was brought up in the time-honoured way by his mother and aunts, until the age of seven or eight, when the responsibility for his education fell to his father and maternal uncle who initiated him in crafts and farming skills, taught him to raise animals, build huts, repair tools and, above all, to discover and to love nature.

"I knew the names of all the plants and how to recognize those that healed and those that killed", he says, "and even here in Paris, I often

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PIERRE KALFON, *French teacher and journalist, has lived for many years in Latin America, where between 1968 and 1973 he taught French language and literature at the University of Chile, Santiago, and was also correspondent of the French daily " Le Monde " and the weekly " Le Nouvel Observateur ". Author of an essay, " Argentine " (Éditions du Seuil, Paris 1967), he is currently at work on a thesis on the literature of the pampas.*

Photo Unesco Dominique Roger

make herbal tea from African plants which are sent to me." In fact, years later his knowledge of agriculture was to astonish many an agronomist.

The only constraint he knew was the systematic memory-training, from the age of five, which consisted of learning by heart and reciting verses from the Moslem Holy Book at the Koranic School. "It is a school of humility", he wrote. "Whatever his status or background, the pupil must be prepared to render such services as fetching wood and water, working the land or seeking donations for his teacher. . ."

Between 1928 and 1930, a terrible drought hit the Sahel, like the one of recent years, in which thousands died from starvation. But without radio or television, this appalling situation went unnoticed in the Western world. Even as an adult, Amadou Mahtar M'Bow was never to forget what he had seen as a boy. He still talks about it: "As a child, I lived with hunger. I saw men and women die for lack of food. For me hunger is no rhetorical expression; one must have lived through it to understand its horror."

One day, when he was nearly nine, "on a morning in November 1929, I was taken by my father, who did not know a word of French, to the French regional school at Louga." Wearing his long African *boubou* (he did not exchange it for European dress until he was seventeen), Amadou Mahtar M'Bow spoke only Wolof like most Senegalese. He also knew Pula—the language of the Peul people—which he picked up from his grandmother.

One wonders whether this is where he became interested in history. Did he learn it from a typical French history textbook of the time which always began, "Our ancestors, the Gauls. . ."? One thing is certain. Within his own family, his father and uncles took it upon themselves to teach him another history, in the oral tradition, of the feats of his ancestors. Louga, where his family lived, had been part of the ancient kingdom of Cayor where resistance against colonial penetration had been at its strongest in the 19th century.

Mr. M'Bow himself has stressed the vital importance of this aspect of his upbringing, and it explains his later deep-rooted need to affirm his identity as an African. "Many of us were brought up on tales which were a far cry from what was taught in the colonial or mission schools."

At fourteen, he was awarded his certificate of primary studies, no mean feat considering that nine out of ten African children dropped out of primary school. Told that he was too old to enter secondary school, he changed to a higher primary school, took a commercial course and got a job as a clerk in the Governor of Dakar's office. He was already organizing a youth movement.

Then came World War II. He was eighteen, thirsty for knowledge and eager to fight oppression. He joined the French Army as a volunteer. "I felt I had a duty to accomplish as a free man", he says. He embarked for France, where he later witnessed the horrors of war. He does not like to talk about this period of his life: "I am not a pacifist at any price", he says, "but to me war is utterly absurd. The next one will mean the end of mankind."

After the debâcle of 1940, he returned to Senegal until the Allied Forces landed in North Africa, in November 1942, when he again joined the French Forces and was assigned to the Air Force school at Agadir, in Morocco. He left there at the top of his class, and a specialist in electrical aviation equipment. At the time, he ▶

From the family album of Amadou Mahtar M'Bow :

Teenager, in the Senegalese bush.

Young clerk in a government office.

Educator, during a nationwide literacy campaign in Senegal.

Photos © Sénégal Photo, Dakar

was the only black sergeant with specialized qualifications.

Demobilized in France in 1945, he was determined to go on studying. But first he had to find a way to get into university. For two years, working alone, he prepared both for his Baccalaureat and for the entrance examination to the engineering section of the Breguet School of Electrical Engineering, in Paris, where he was admitted as a first-year student.

There were then few African students in Paris, in the Latin Quarter. Amadou Mahtar M'Bow was no run-of-the-mill student. He was convinced that he had to fight for the dignity of the oppressed, and in particular the dignity of the "black peoples", since they were among the most oppressed.

It was during this post-war period that Africans were discovering Aimé Césaire, of Martinique, who had coined the word "négritude" and brandished it like a flag, long before American blacks proclaimed "black is beautiful". At that time, the poet Léopold Sédar Senghor, Senegal's future head of state, was the most listened-to apostle of négritude. Jean-Paul Sartre was writing a brilliant preface to Senghor's "Anthology of Black and Malagasy Poetry". Another Senegalese, Alioune Diop, was defending Pan-Africanism in the magazine *Présence Africaine*. . .

But for an African living abroad, in France, there were then three priorities crying for action: first, to rediscover Africa's true identity, second to rescue Africa's past from colonial disdain, third to proclaim the rich cultural heritage of the African people.

Senegal was sorely in need of technicians but it was even more in need of people to awaken the African conscience.

So, Mahtar M'Bow decided to return to his own cultural roots, though not empty-handed and not unprepared. Rather than become an engineer-technocrat, he chose as a Senegalese, to become an African geographer and historian. After taking his Baccalaureat at the age of 26, he entered the Sorbonne. "There I learnt rigour and method", he says, speaking of his Marxist and non-Marxist mentors.

He quickly established himself in the African community as an anti-colonialist student leader. With friends he organized a research group seeking to reconcile the quest for African cultural identity with Marx's principles and the anti-imperialist struggle.

In 1948 he became President of the Association of African Students in

Photo Georg Gerster © Rapho, Paris

Fishermen's boats on one of Senegal's vast Atlantic beaches between Dakar and Saint-Louis.

Paris, and in 1950, President then Secretary-General of the Federation of Black African Students in France. This organization was to be the well-spring from which emerged the future "intelligentsia" of all French-speaking Africa. It was here that Mr. M'Bow discovered the complex realities of pressure groups and French political and trade union movements.

Contrary to what sometimes happens, his militancy stimulated his academic work. He quickly obtained his *licence* degree, and even found time to marry a geography student, Raymonde, whom he met at the Sorbonne. She was a Haitian, tall and beautiful, a diplomat's daughter, and a descendant of the African slaves shipped to the Americas centuries ago.

Their marriage was the beginning of a long and rewarding association: joint publication of many works, and a close family life, with three children.

When he left university, M'Bow was offered a teaching job in France. He refused and asked to return to his own country. But because of his political views, the authorities of French West Africa preferred to keep him away from the major centres. He was appointed to the secondary school at Rosso, a small isolated town in Mauritania, then a part of French West Africa. "I was delighted", he recalls. "I wanted to make contact with Africa again and to be with African pupils. I was just thirty, and the only black secondary teacher in the Senegal-Mauritania area. It was quite an event."

This "event" was to last two years. A singular spark fired the lessons of this young teacher, but his pupils were not aware that it came from a man rediscovering himself.

Amadou Mahtar M'Bow did not remain unnoticed in isolated Rosso for very long. At that time, Unesco's Director-General, Jaime Torres Bodet, had proposed the setting up by Unesco member countries of "fundamental education programmes" to combat illiteracy. The Rectorate of Dakar called on Mr. M'Bow, because of his experience as a teacher and also as a Senegalese, to head a new department of fundamental education for the whole of Senegal.

Then began a unique period in the life of Amadou Mahtar M'Bow, "no doubt the most inspiring and instructive of my whole career", he says. This was a far cry from the quiet sinecure of a civil servant sitting behind his desk. For five exciting years, from 1953 to 1957, accompanied by a small team of African doctors, veterinary personnel, student teachers, farming specialists, radio and cinema technicians, and sometimes even a carpenter and a mason, he travelled by truck throughout the country.

He ate from the calabash pot with the villagers, whose life he shared for two or three months at a time. He acquired a unique and detailed knowledge of daily life in the villages of Senegal. Under his direction, schools were built, health centres opened, midwives and nurses trained, agricultural co-operatives installed, chemical fertilizers introduced. Everywhere he strove to alleviate ignorance, disease and misery, the afflictions of what was already beginning to be called underdevelopment.

The villagers were illiterate. But "dignity comes through learning". The history teacher became a simple primary school teacher. Using French and local dialect, he devised a reading and writing method specially adapted to his classes. His pupils, of both sexes, were aged from 6 to 60. "In Badiana, for the first time, a literacy campaign included both men and women. The villagers helped to finish the ideographic alphabet; it was stencilled and roneoed... The simplicity of the method gave them confidence. Those who had learned ▶

to read well were loudly applauded. Evening sessions sometimes went on far into the night..."

It is revealing to read the reports written by Mr. M'Bow, Chief of Mission, after expeditions to places such as Badiana, Dembakane, Senoudébou, Mangaroungou, or Gaya... The fifty close-written pages are not only a sociological study of life in a Senegalese village twenty years ago, but also, despite the deliberately impersonal style, an adventure story of a handful of men working together to bring African villagers into the modern world.

Between missions, however, Mahtar M'Bow found time to participate actively in the political life of his country. His name became known as that of an opposition leader whose views commanded respect. First he was a member of an independent group of intellectuals which, in 1955, united with the Democratic Coalition, led by Léopold Senghor, to later form, with the Senegalese Union for Progress, the Senegalese People's Coalition.

In 1957, France began its decolonization process and installed Senegal's first semi-autonomous government. Mr. M'Bow was appointed the first Minister of Education and Culture. Once again, he travelled through the bush, built additional schools and set up the first post primary classes, so that more children could go on to secondary education.

In 1958, General de Gaulle, on assuming power, asked the French African territories if they would agree to form a Community linked to France. Some said "Yes". Others, with M'Bow, replied "No", and called for immediate independence. When the views of the former prevailed, M' Bow, who had resigned to fight his campaign, returned to secondary teaching, with his wife, at St. Louis, in Senegal, at the same Lycée Faidherbe which had turned him down as a pupil.

This time, it was as an influential opposition leader in the African Regroupment Movement that he patiently took up the struggle again. His progressive nationalism won him esteem abroad, especially when Senegal finally gained independence in 1960.

He travelled a lot, made many contacts, published several books aimed at making Africa better known to the world at large and also school textbooks designed to impress on African children the richness and diversity of their continent. But he remained a teacher at heart.

The new Africa needed highly qualified personnel. In many countries, Unesco launched the idea of teacher training colleges to train such personnel, and M'Bow was called on to teach in one of these colleges in Dakar.

In 1966, Senegal's economy depended on one crop, the ground-nut. An economic crisis loomed; the huge port of Dakar stood empty. President Senghor asked the opposition to collaborate with him. It accepted, hoping to implement its own proposed reforms from the inside.

Amadou Mahtar M'Bow once again became Minister of Education and with Léopold Senghor's accord began the "Africanization" of the university. He himself presided over the commission which drew up the first Senegalese alphabet based on the phonetic transcription of the six Senegalese languages, including Wolof. From then on the teacher and the political leader in M'Bow were to become one.

When the 1968 wave of student revolt in the world hit Dakar, M'Bow tried to avoid a head-on confrontation and succeeded in keeping the discussion open with the student body whose motives he fully understood. Following this he was made Minister of Youth and Culture, a post he held until 1970, when in a cabinet reshuffle he again left the Government.

BY that time he had come to be known as "elder brother" by many of his fellow Africans. In 1966 and again in 1968 he headed the Senegal Delegations to two Unesco General Conferences. Since 1966 he had been a member of Unesco's Executive Board. He also became chairman of the African group of Unesco's Member States and of the group of 77 countries representing the Third World.

In November 1970, Unesco's Director-General, René Maheu, offered him the key post of Assistant Director-General in charge of Education.

This post, calling for administrative and diplomatic qualities, permitted Mr. M'Bow to gain a detailed knowledge of the educational developments in every part of the world.

At Unesco's Paris headquarters and "in the field", M'Bow's tall, well-built figure soon became a familiar sight. He was known for his frank, open manner, his simple and direct method of speaking. Possessed of a phenomenal memory, he spoke with an assurance that comes from knowing every detail of a project. He came to be recognized as the man who preferred to settle questions rapidly by direct personal contact rather than through red tape or lengthy bureaucratic procedures.

He owes to his African village background and long experience a feeling for conciliation invaluable for solving harmoniously the thorniest problems. "We have never seen him lose his temper", say his colleagues, "but while he readily shows confidence in others, woe betide anyone who lets him down."

Now a vigorous 53, with a capacity for work that astonishes everyone, Amadou Mahtar M'Bow has no illusions about the job ahead. He knows it will be tough, but he also knows how much Unesco can do to help countries free themselves from ignorance and poverty. Knowing Unesco well and believing wholeheartedly in its objectives, he intends to infuse it with fresh vigour and give it a new style.

"I should be delighted indeed to listen—as we do under the baobab tree in Africa—to all points of view and to find a solution acceptable to all...", he says. "I am a little wary of a universalistic humanism which often masks Eurocentrism. I prefer pluralism, which accepts the distinctive identity of each people. I was brought up to accept differences in a spirit of tolerance. I am the brother of every human being, whatever his or her race, whatever his or her belief, and wherever he or she may live. This is the first stepping stone for building true solidarity between all peoples.

With René Maheu, Unesco's former Director-General, a whole generation of the early pioneers of the Organization is disappearing. They were dedicated men and women who often came from the Western world. With Amadou Mahtar M'Bow, a black African who stands at the cross-roads of several civilizations and rejects neither his past under a colonial regime nor his European university background, a new generation of men and women is emerging in the train no doubt of the present acceleration of history.

The path that led the country boy from the African Sahel to head one of the most important organizations of the United Nations system perhaps marks a turning point in the emergence of this other world, long oppressed, despised or disregarded—the world of the disinherited peoples. "I feel that I am today the symbol of these peoples", Amadou Mahtar M'Bow said on taking office, on November 15, 1974. In choosing him as Director-General for six years, Unesco has entered the 21st century.

■ ***Pierre Kalfon***

Special Unesco Courier supplement

UNESCO 1975-1976

Unesco's General Conference, meeting in Paris from October 17 to November 23, 1974, adopted Unesco's programme and budget ($169,992,000) for 1975-1976, and elected its new Director-General, Mr. Amadou Mahtar M'Bow (see profile, page 14).

In this eight-page supplement, the "Unesco Courier" publishes salient passages from speeches made by Mr. M'Bow on taking office on November 15, 1974, (below) and at the closing session of the General Conference on November 23, 1974 (see page 21).

The supplement also presents major new activities which Unesco will undertake in 1975 and 1976, (see boxes, pages 20-26).

1

An age of solidarity or An age of barbarism?

by Amadou Mahtar M'Bow

Director-General of Unesco

SINCE each of us is marked by the age in which he lives, by the environment into which he was born and in which he grew up and by the experience which he has accumulated, it is first of all in the spirit of the African people, and in their wisdom, that I shall find guidance for my actions.

When I speak of the people of Africa, this is not some abstract image, but a reality which I have experienced and in which I have fully shared. My presence at the head of this Organization is merely the consequence of the profound changes which have taken place in that vast continent since the present century began.

Yes, I grew up with Africa, suffering its pains, feeling its anguish, sharing its aspirations. The lesson I learned there was the lesson of determination to root oneself in the traditional environment; in accepting the fundamental values of that environment, we accepted our responsibilities as free beings in a dominated society, for what we had to preserve was freedom of the spirit, in which lies the true meaning of dignity. We never felt hatred in our hearts, even in times of conflict, because we never lost hope in mankind...

The inevitable choice facing mankind is between entering an age of solidarity or relapsing into an age of barbarism. Solidarity means firstly the acceptance of differences, whether they are biological in origin or the product of geography and history. It means the renunciation of all notions of hierarchy among peoples and nations. It means the abandonment, once and for all, of the view of history long held by those who, from Ancient Greece and Rome down to the age of modern imperialisms, have always confused civilization with power, reducing to the status of "barbarians" the subjugated peoples as well as those who rejected their yoke.

But solidarity means something more. It calls for an effort to rise above our differences in order to build, on a world-wide scale, a new economic, social and cultural order which, transcending national self-interests, will enable man to organize his environment rationally, so that each of us may live there freely and happily, in brotherhood with his neighbours, whoever they may be.

It is to be feared that the only alternative is barbarism, for the balance of terror and the rising tide of inequalities may lead to those final confrontations after which nothing will remain but ruin and desolation: the destruc-

tion of all that human genius has helped to create over so many centuries.

Even if peace were assured, failure to make wise use of the power conferred on us by science would pose no less a threat. Man's capacity to calculate and to inquire has today expanded to the point at which he is able to study both the infinitely small and the infinitely great. Whether he penetrates the mysteries of genetics or escapes from gravity to explore outer space, whether he pursues the study of the microcosm, dividing particles which only yesterday seemed indivisible, or sets out in conquest of the universe, man indeed appears to stand on the threshold of a new age, as if the combined fruits of two centuries of scientific progress were on the point of freeing him from all his bonds.

But were science to be diverted from its highest goal and placed at the service of evil, it too might well imperil mankind's very existence, or at any rate enslave humanity in new forms of bondage, worse perhaps than any which it has known throughout its history.

It is true that scholars and scientists in many countries are—each face to face with his own conscience—reflecting on the true meaning of their work and on the final aims of science. Unesco cannot stand aside from this debate, any more than it can remain indifferent to whatever bears on the progress and the destiny of mankind.

Its responsibility is all the greater since no organization is better placed to mobilize the intellectual resources which both reflection and action demand. The ambition of its new Director-General is to stimulate a vast movement in which scholars from all horizons and all disciplines may participate in a joint, world-wide effort of meditation on the problems of the evolution of our civilizations.

Since its foundation in 1946, Unesco has followed a long and difficult path, facing countless problems and passing through a number of world political crises with their tensions and confrontations. Today its Member States, **all** its Member States, must endeavour to understand that Unesco can carry out its mission only in an atmosphere of serenity, and frank and patient dialogue.

In the period of unprecedentedly rapid change through which the world is passing, Unesco must constantly review its objectives and its methods, in order to meet the imperatives of new situations. In many spheres, this sustained effort of renewal and adjustment has made it possible to deepen and broaden a programme of action for which, by reason of its universality, there is still no substitute in the modern world.

Admired by some, criticized by others, at times misunderstood, Unesco exists because of the part taken in its work by its 135 Member States, whose participation bears witness to the faith and hope that mankind as a whole places in it. So a heavy responsibility is involved in everything connected with the preparation and execution of Unesco's programme, which demand an unremitting effort of self-criticism, evaluation of the results achieved, and an open-minded, imaginative outlook on the future.

Ethical action, the promotion of knowledge, with all the exchanges it involves, and aid for development, cannot be considered in isolation from one another without a risk of divesting Unesco of one of the reasons for its existence.

While ethical objectives reflect the Organization's loyalty to one of its foremost tasks, which is to lay down universal standards applicable to all because they are freely accepted by all, the promotion and dissemination of knowledge represent the prime source of progress.

But human destiny cannot be dissociated either from the development of society—of all societies; there is no society in the world today which is not in some way having to face development problems. Special attention must certainly be given to the needs of the most seriously deprived peoples.

It is shocking and unjust that hundreds of millions of human beings are suffering the humiliations of disease, illiteracy and hunger, and are thus being deprived of what is indispensable to human dignity, when one thinks of the colossal waste which is a feature of certain societies.

If it is not to fail in its mission, Unesco must do more, and do it more effectively, to help the underprivileged. And so we must make a determined effort to modernize our methods for planning and carrying out all our activities. . .

Each period of history has its underlying trends, its lines of force, marking its significance and its distinctive character. Today more than ever, an organization such as Unesco cannot afford to trail world events; it must resolutely take its proper place in the vanguard of the double movement of emancipation and unification of peoples which is the outstanding feature of our time.

I wish to address an appeal to Unesco's Member States, and, through them, to all men and women in every country of the world, to redouble their efforts to encourage all those for whom the happiness and well-being of others are more than empty words to rally to Unesco in a great movement of universal solidarity. Forum for the global exchange of ideas and fraternal association of peoples, Unesco must continue to be the ultimate hope for peace and understanding, in a world which now, for better or worse, possesses tremendous technical powers.

The task before us is to see to it that each day the meaning of justice and truth is more clearly perceived, to combat all that abases man physically and intellectually—poverty, ignorance and inequalities and constraints in all their forms—and to free him from the often overwhelming pressures of exploitation, alienation and mechanization which tend to reduce him to the status of an object.

If the goal at times seems far distant and our quest an arduous one, it is because the true achievement of our purpose would mean nothing less than an ethical revolution through which all mankind may be assured of full development. I remain convinced—and this conviction will underlie all my work in the service of Unesco, in the years ahead, and be an unfailing source of hope and energy—that hatred and misunderstanding can be overcome in the unity which is forged when ideals freely accepted by all are finally put into practice, and that man will one day succeed, as we read in the Vedas, in "overcoming hatred by love, and falsehood by truth..." ■

Unesco 1975-1976

YOUTH

■ **Mobilization of young people, particularly students, in national literacy campaigns.**

■ **Study on ways in which young people can share in community action to improve or preserve the quality of the environment.**

■ **International inquiry to evaluate cultural services available to young people in different countries.**

■ **International meeting of young scientists from developing countries on student education and special problems in university scientific training.**

■ **Surveys by groups of young people in developing countries on the role and influence of the cinema in the cultural life of youth.**

■ **International inquiry into attitudes and claims of young people regarding laws that determine their rights and responsibilities (right to vote, civil and penal majority, minimum age for marriage, etc.).**

■ **Survey of needs and aspirations of young people in Asia today ; in particular how they can help to preserve traditional cultural values in modern life.**

■ **Young people to participate in programmes for preserving and developing the cultural heritage (monuments and sites).**

■ **First international conference of ministers and specialists on the role of physical education and sport in the education of young people.**

A greater need than ever for tolerance and understanding

WE do not live in an ideal world and it would be vain to seek to idealize it. That the world is often torn by political, economic and social conflicts is the patent reality of today. But this reality forces us—without denying any of the contradictions of our times and without giving up truth and justice as the basis for our action—to seek to rise above the tensions and conflicts of today if we genuinely wish to act in conformity with the principles of our Constitution.

I wish to make another urgent appeal for tolerance and understanding. In the future we should try, even if at first it seems impossible to do so, to achieve through patient dialogue the consensus which should be the golden rule in an institution such as this. Admittedly, this calls for quiet, patient and unflagging efforts and for mutual concessions. It is by this means that the moral authority of our Organization can be strengthened. I am firmly resolved to speak out on important international questions each time and whenever I deem it necessary in order to reconcile conflicting points of view and in order to reach the broadest possible agreement.

One thing strikes me immediately: the importance that the General Conference as a whole has given to Unesco's **ethical action,** particularly its efforts to contribute (in its fields of competence) to the effective application of human rights, the maintenance of peace and the development of understanding among peoples.

Unesco's action for peace must be pursued on two fronts : first, against all forms of oppression and discrimination which endanger peace and international security and are a denial of human dignity; and second, support for the forces of progress, freedom, justice and mutual respect among nations. In this respect the General Conference has repeatedly stressed that justice is directly linked with the concept of social progress and that equity must govern relations between both individuals and nations.

With these imperatives in mind, Unesco will do its utmost, during the next two years, to ensure that the combined resources of research, education and communication make a more effective contribution to promoting the right to education, science and culture. As the United Nations agency pledged to uphold the highest intellectual and spiritual values, Unesco will also see to it that this vigorous and sustained effort extends beyond its own spheres of competence to embrace the whole range of human rights and fundamental freedoms.

Unesco's determination to combat the inequalities which deprive vast numbers of the world's people of the right to education has been the guiding principle for planning many of Unesco's activities in education. Although Unesco can contribute only indirectly towards removing the social barriers which many delegations have denounced as a major cause of the inequalities in education, through its programme for equal access to education it is directly attacking specific forms of discrimination against women and girls (who make up half of humanity), migrant workers and their fami- ▶

1975 INTERNATIONAL WOMEN'S YEAR

Designated as International Women's Year by the United Nations General Assembly, 1975 will mark a turning point in the struggle to end discrimination against women. The United Nations has established three themes for International Women's Year :

— the promotion of equality between men and women ;

— the integration of women into development ;

— recognition of women's increasing contribution to strengthening world peace.

Unesco's contribution to the achievement of United Nations objectives for International Women's Year will include the following activities :

Education

■ International meeting, in 1976 (in co-operation with the International Labour Organization) on educational and vocational guidance and job opportunities open to women. It will study ways of integrating women into economic, social and cultural development and of promoting equal access to education.

■ Study on working mothers and on solutions adopted in different countries to problems of educating pre-school-age children.

■ Meeting of women holding major posts in Unesco Member States on the theme " Exchange and co-operation between women in different countries".

■ Inquiry into recent steps taken by governments in different parts of the world for the advancement of women in such fields as education, employment, social welfare, family planning, legal status, etc.

■ Two major programmes to develop women's technical education in rural areas, in the Central African Republic and Mauritania.

■ Promotion of equal access for women to all literacy programmes.

Social sciences

■ Research on the changing role of men and women in family and community life.

■ Study on the image of women presented in school text-books.

■ Study on how women can contribute to the strengthening of peace.

Information

■ Study on the effectiveness of mass communications (radio, television, etc.) in the education of women.

EDUCATION

Educational Innovations

■ A global reporting service on current innovations in education to be set up as part of Unesco's International Bureau of Education. Unesco will maintain an updated computerized directory of educational studies and research. By the end of 1976, the International Bureau of Education will operate as an educational data bank on a world scale.

■ A comparative study to analyse and evaluate educational theories of the 20th century.

■ Studies on new methods for the education of nomad peoples and children of migrant workers and on the most effective ways of teaching the physically handicapped.

■ International Conference in Geneva, in September 1975, on the changing role of the teacher and its implications for new approaches to teacher training.

New strategies for the struggle against illiteracy

■ Mobile teams to be formed for training literacy teachers in Africa and Asia.

■ Expansion of activities by regional functional literacy centres in rural areas of Latin America and the Arab States.

Combating discrimination in education

■ World-wide Unesco inquiry into new ways of combating discrimination and ensuring equality of opportunity and treatment in education.

■ A wide-ranging inquiry into obstacles to the achievement of the right to education for all.

Development of education

Focal points of international co-operation:

■ Conference of African Ministers of Education, in 1976, on the development and renovation of education systems at national and regional level.

■ Meeting of Latin American and Caribbean Member States, in 1976, on the same questions.

■ Regional meeting to prepare Fourth Conference of Ministers of Education of Arab States.

■ Seminar on the development of out-of-school education in Africa.

■ Conference of representatives of education ministries of the 25 least developed countries to study new ways of promoting educational progress in these countries.

lies, refugees, and people struggling for their independence.

In addition, there are other Unesco activities which can be said to fall into this same category, aimed at removing obstacles or changing conditions which hamper equal access to education for all. These include educational programmes for rural development and literacy and adult education programmes, all of which have been given priority status by Unesco's General Conference.

In many countries, the economic and social inequalities that exist between urban and rural areas are tantamount to discrimination in education for millions of rural children and young people. In the years ahead, therefore, we must step up our efforts in education for rural development.

Because it is so widespread and has such profoundly negative effects on the development of the individual and the community, **illiteracy** remains one of the major evils of the twentieth century. Its persistence—its actual increase, when reckoned in absolute figures—makes it one of the most formidable challenges that the international community must take up if the future of mankind is not to be seriously compromised.

If Unesco's action in this respect has perhaps not yet been as fully effective as one could wish, this is mainly because the prime factor in attacking this problem is national determination, since only governments are able to bring about the kind of total mobilization of a country's resources without which literacy campaigns are doomed to failure.

Adult education too is a powerful force in the democratization of education, and one of the main links in lifelong education. It is for these reasons that the General Conference has asked that Unesco's activities aimed at correcting the imbalance found in many education systems should be continued and intensified, in line with the recommendations of the Third International Conference on Adult Education, held in Tokyo, since this imbalance is detrimental to adult education which has its own objectives, content and methods.

In recent years, the idea of **lifelong education** has become one of the key-features of Unesco's programme... I think it will be possible to free the concept of lifelong education both from the unduly restrictive definitions some people have tended to give it and from the equally dangerous risk of vagueness which all too often deprives general concepts of any real content, so that its full scope and living reality may be clearly seen.

Unesco's programme for **science and technology** has been reinforced in the past few years, although its scope is perhaps not yet as broad as it should be.

As regards the spread of scientific knowledge, I welcome the support given to the UNISIST programme since the exchange of scientific and technological information is of fundamental importance for the progress of both the industrialized and the developing countries. But the developing countries still need to be able to make use of such knowledge in ways that they themselves choose. It is with this in mind that we shall continue to aid Member States whenever they ask for assistance in formulating science and technology policies appropriate to their development needs.

Regarding **human resources** in science and technology, you have adopted a recommendation on the status of scientific research workers, the application of which should give positive results. We shall also try to facilitate contacts between research workers and institutes, particularly on a regional basis.

I also note with satisfaction the importance accorded to science and technology training programmes at all levels. Training scientists, engineers and technicians is still a crucial problem for most developing countries. For this reason, we must step up our efforts in this field too, giving special emphasis to the quality of such training.

Our post-graduate training programmes have an important function and meet real needs. We shall try to strengthen this part of our programme, particularly in the developing countries; and I should like to thank those States which have arranged for their institutions to provide post-graduate courses.

I wish to say a few words about **"transfers of technology"** although, in fact, I prefer the term "development of appropriate technologies". Some countries have fallen into what may be called "technological traps". Imitating others, they have adopted techniques which call for considerable capital, costly equipment and foreign specialists, and which are not really suited to their needs.

It would nevertheless be absurd to reject any innovation from ano-

ther country or even to refrain from using advanced technologies whenever the right conditions can be fully met. I think that one of Unesco's functions should indeed be to assist Member States which seek such aid to find the right path, particularly by promoting the pooling of ideas, information and experience and by helping to launch pilot projects that can be further developed.

While it is true that many countries seeking to further their development still lack the necessary scientific and technological knowledge, it is also true that, on a global scale, we have both the knowledge and the resources with which to banish hunger, cure disease, and remedy poverty and injustice. What we lack is an ethic which provides an alternative to the egoistic or uncontrolled and intimidating application of science and technology, a humanitarian and humanizing ethic which can guide the thinking and purpose of men and women towards more fraternal and more universal aims.

While certain parts of the programme for the **social sciences, humanities and culture,** were approved unanimously, others in some cases gave rise to widely diverging opinions. This occurred, in particular, when ideological differences brought to light different interpretations of economic or social and cultural questions which the social sciences cannot as yet analyse objectively, for want of scientific tools that would enable us to reach a universal consensus.

Thus, any action that enables the social sciences to contribute to the development of scientific methods whose usefulness and objectivity are universally accepted would be both justified and beneficial. And at the same time as such methods are improved, efforts must be continued to make better use of them. In saying this I have in mind both the developed countries, with their specialists whose goal will always be to seek perfection, and the developing countries, where the main emphasis must be placed on basic training by means provided for in one of the resolutions adopted by the General Conference.

However, over and above these specific activities, the role that the social sciences play or will play in Unesco's programme has been considerably expanded. It has been rightly pointed out that the social sciences are at the crossroads of numerous activities, of which the problems of peace, of development or of the establishment of a new international order are only three examples. The social sciences should provide the thinking which precedes action and then enriches it.

Similar observations could be made concerning culture. Today there is a growing awareness that ▶

Lifelong Education

■ International symposium on the role that groups other than teachers can play in preparing programmes of lifelong education.

■ How can art teachers and students help to promote, in the context of lifelong education, a better public understanding of art? An urban pilot project will be carried out on this question.

■ Studies of the effects of TV and radio programmes designed for pre-school children and of the effects of adult programmes on these children.

■ Studies on the production of special TV and radio programmes for rural people, migrants and the elderly.

International recognition of degrees

■ New regional arrangements to be made for the international recognition of degrees and diplomas in higher education. Following the adoption of a convention for Latin America (the first of its kind) in 1974, Unesco is preparing a similar convention for countries bordering on the Mediterranean.

Prevention of Drug Abuse

■ Study of measures taken by different countries to combat drug abuse (International meeting of specialists).

■ First regional conference, in Latin America in 1975, to promote regular international exchanges of reports and information on the fight against drug addiction and joint production and use of educational materials designed to combat drug abuse.

Problems of migrants

■ Major international inquiry into difficulties experienced by migrant workers in educating their children. International meetings on other problems of migrants: teaching children of migrants their mother tongue and the culture of their native country, helping migrants to readapt on returning to their own country, etc.

CULTURE

General History of Africa

■ Publication in 1975 of the first two volumes of the "General History of Africa" ("Introduction and African Prehistory" and "Ancient Civilizations of Africa"). Two more volumes to be published in 1976: "Africa from the 12th to the 16th Century" and "Africa under Foreign Domination, 1880-1935".

African Cultures

■ Major ten-year research programme on oral traditions in Africa and promotion of African languages (transcription of non-written languages, publication of cultural works and teaching materials, etc.)

■ Studies on the creative arts in Africa and their influence in other parts of the world. A symposium on this theme to be held in Lagos (Nigeria) in 1975 as part of the World Black and African Festival of Arts and Culture.

Oceanic and Asian cultures

■ Research on Malay culture (arts, architecture, music, languages and oral traditions, etc.)

■ Study on the role of South East Asian cultures in Asian cultures as a whole.

■ Studies on the problems of cultural identity of indigenous peoples of Oceania (oral traditions, dance, music).

■ International co-operative programme between India, Pakistan, Central Asian countries and Iraq for archaeological research in the Indus Valley (Pakistan) one of the earliest sites of human civilization.

■ International co-operation for the preservation and restoration of monuments and architectural groups in the Kathmandu Valley (Nepal). See special issue of the "Unesco Courier", December 1974.

Latin American cultures

■ Publication of two new volumes (on Latin American music and on the history of ideas in Latin America) in Unesco's major series of studies on "Latin America through its Culture". Preparation of two albums—on the plastic arts and on music.

■ Studies on the cultural contributions of immigration movements into Latin America and publication of a work on this subject in a new series, "Latin America in the World."

■ Research on the indigenous cultures of Latin America and publication of a book on this subject in "Latin America through its Culture" series.

Arctic studies

■ Co-operative programme for studies by specialists in linguistics, popular arts and crafts, music, etc. from different countries and regions on the culture of the peoples of the Arctic. See special issue of the "Unesco Courier", January 1975.

European cultures

■ Studies and research on South East European cultures (archaeology, history of ideas, economic and social history, post-Byzantine art, Ottoman archives, literature, etc.) and on Slav cultures.

Cultural heritage

■ City modernization often destroys vestiges of the past. Unesco will study this problem and particularly the danger of losing a sense of the past.

■ Studies on problems arising from the destruction of films and on setting up an international system for preserving the treasures of world cinema. See "Unesco Courier", September 1974.

■ International campaigns for the preservation of historic quarters, towns and sites (Algiers, Fez, Isfahan, Ouro Preto, Kyoto, etc.)

■ Studies on possible adverse effects of tourism on traditional cultural values.

■ Regional studies in Africa and South East Asia on better adaptation of museums to needs of modern life.

Cultural policies

■ Intergovernmental conference on cultural policies in Africa, in 1975.

■ Preparation of an intergovernmental conference on cultural policies in Latin America and the Caribbean, in 1977.

Cultural development

■ Preparation of an international recommendation to ensure that everyone has access to culture and can share fully in cultural life.

■ Preparation of an international recommendation on exchange of works of art and cultural property between museums and institutions of different countries.

■ Creation of an "International Fund for the Promotion of Culture" and aid in setting up national organizations to support cultural activities and artistic creation.

■ Experimental workshop for creative work and research in film-making and for seminars on the cinema: the use of small gauge film (super-8 mm type) in countries with limited economic resources, etc.

■ International symposium of artists, sociologists, art historians, etc. on the place of art in modern life, its evolution and its role.

■ Series of Unesco studies and projects in support of the United Nations Programme for setting up a new international economic order: development of cultural identity, development of a scientific and technological infrastructure in the Third World, etc.

culture is an integral part of overall development. This situation is not without its dangers, as I have already said in speaking of the relationship between cultures, which are sometimes fragile, and technologies which are often recklessly imported. The only way to transform this fragility into strength may be through the planning of cultural policies in harmony with policies for education and science. If these three components are integrated, each will be strengthened by the contributions and support of the others.

I shall not examine in detail the numerous activities which you have approved, such as the preservation and development of national cultural heritages, the restitution of cultural property to its country of origin, the preservation of historic quarters, towns and sites in places where modernization is in many cases intrusive, or man in his environment in connexion with the Man and the Biosphere Programme. Yet the fact that I mention these activities only briefly in no way detracts from their importance nor from the attention I intend to give to them.

It was gratifying to find so many speakers contributing to the General Conference discussions on the programme for **free flow of information** since access to information is vital both to the strengthening of international understanding and to the development of science and technology. However, in this field as in many others, a certain laxity of language can be harmful.

Information may appear differently to those who communicate it and those who receive it. The former see it as a service they are providing, whereas for the latter it is or it may appear to be an intrusion upon their environment or their privacy. Freedom to circulate information may become a pretext for exercising pressure, and this raises the problem of the content of information.

You were therefore right in emphasizing that the free flow of information, which has its rightful place in Unesco's Constitution, must be a two-way flow, and be regarded as an exchange, if in this field too we are to avert a division of the world into producers and passive consumers. In this respect the adoption of a code of ethics for journalists, which has been proposed, could become the counter-balance to an ill-defined freedom of the press. Many other problems are inextricably bound up with the free flow of information. One example is the shortage of newsprint and the control of its production in a manner prejudicial to certain countries, particularly the least developed, as is the case today.

Intellectual co-operation which was the very root of Unesco, since our Organization was in a real sense the successor to the League of Nations Institute of Intellectual Co-operation, remains one of the principal reasons for Unesco's existence even if, as a result of changes in the world, the Organization has gradually extended its activities to new fields. Today, intellectual co-operation is truly the source and the fundamental condition of all international action for progress.

Without a global exchange of ideas, human knowledge would not achieve that universality which not only puts it in its true perspective and enriches it, but at the same time enables it to be used for the benefit of the world community. To appreciate the true value of the communication of knowledge, one need only think of the injustice caused in the field of science, for example, by the monopolization of knowledge for the benefit of the few, the threats to international peace and security to which this may give rise, and the obstacles to progress which it creates.

Unesco's record in intellectual co-operation is outstanding and is widely known. I shall try to broaden this basic activity still further, steering it when necessary in new directions.

I think that Unesco, whose vocation it is to be one of the centres of universal thinking, should call more frequently on the great figures of the world intellectual community—philosophers, historians, men of letters, scientists, specialists and research workers in all disciplines and of all schools, artists and sculptors—to reflect together on certain major problems of our time. I intend shortly to set up a working group of this type, whose members could give useful advice on certain aspects of Unesco's role in the coming years.

We ought also to stimulate international co-operation among the major research institutions by encouraging the development of fundamental and applied research at national level in the various branches of knowledge. I think, in fact, that we should get the

most influential institutions in the world to participate closely in the execution of Unesco's programme, as part of a mobilization of the world scientific community to serve mankind and especially the developing countries.

I should like to emphasize here the crucial rôle which Unesco's National Commissions must play by initiating and stimulating intellectual co-operation among the various national institutions. Similarly, I think that the trend which has developed in recent years towards entrusting certain programme activities, such as studies or research, to non-governmental organizations, deserves to be encouraged as it has frequently produced excellent results.

Inter-university co-operation, which we chiefly promote through the International Association of Universities, is of course one of the fundamental forms of intellectual co-operation.

In this connexion, we expect a great deal from the initial work of the European Centre for Higher Education in Bucharest and from the similar centres soon to be established in Latin America and the Arab countries. Moreover, the conclusion of agreements between States, modelled on the Mexico City Convention on the recognition of studies, diplomas and degrees in higher education, should infuse fresh life into intellectual co-operation by encouraging the movement of students and teachers and the pooling of ideas...

I view with great hope the activities of the **United Nations University** which will shortly begin. Conceived as an "international community of scholars engaged in research, post-graduate training and dissemination of knowledge", the United Nations University will study from an interdisciplinary standpoint the urgent problems posed by the survival, development and welfare of mankind.

But as well as offering unprecedented opportunities for throwing light on these problems through the combined intellectual efforts of the international community's most eminent institutions and personalities, the United Nations University will also help to strengthen the solidarity of the world community and stimulate the flow of ideas, in particular by endeavouring—as laid down in its Charter—to "alleviate the intellectual isolation of members of academic and scientific communities in the developing countries". We may thus hope that in addition to being a symbol of the universality of thought and an international intellectual centre, the university will be a powerful force for international rapprochement and understanding.

Co-operation among the Specialized Agencies of the United Nations system is obviously different in nature from that which ▶

SCIENCES

Science Brains Trust

■ Setting up of a panel of leading experts from the natural and social sciences to advise on the human implications of scientific progress.

Energy problems

■ Promotion of international action to ensure that the best use is made of present energy sources and studies on large-scale generation of future energy supplies by means of nuclear fuels, solar energy, wind, tide and geothermal sources.

Science policies

■ Conference of Ministers of Arab Member States responsible for applying science and technology to development.

■ Study of measures for reducing the science and technology gap between the industrialized and the developing countries.

■ International conference, in 1976, on improving the training of engineers and technicians in developing countries.

ENVIRONMENT AND THE QUALITY OF LIFE

■ Expansion of Unesco's Man and the Biosphere Programme (research into problems of the environment and the rational use and conservation of natural resources).

■ International and regional research projects on the impact of man's activities on various types of ecosystems. Assessment of ecological effects of using chemical fertilizers and pesticides, of major engineering works and of industrial and urban use of energy.

■ Research on pollution and its effects on the biosphere and on long-term effects of man's economic activities on climate and natural resources (in co-operation with the World Meteorological Organization).

■ World-wide network of biosphere reserves to be set up for conservation of natural areas and their animal and plant life.

■ International survey on how children and adults judge the quality of their environment.

■ Studies of traditional forms of architecture in different Asian countries and the ideas they offer for use in modern building (see page 4).

■ Unesco aid for the development of the Dakar School of Architecture and Town Planning.

■ Series of studies, in 1975-76, on the effect of social and cultural factors on the quality of life in cities.

■ Participation of Unesco in the preparation of the United Nations Conference on Human Settlements — "Habitat"—, scheduled for May-June 1976 in Vancouver (Canada).

INFORMATION BOOKS, PAPER

■ Research on the international flow of information media materials and on the social implications of communication media (press, radio, television, etc.)

■ An analysis of the Right to Communicate.

■ Promotion of regional co-operation in applying space technology to education and development.

■ Aid to Unesco Member States in the formulation of national communication policies, including the first regional intergovernmental conference on this subject.

■ Priority aid for the development of communications systems and for professional training (press, radio, television).

■ Unesco will promote the setting up of press agencies in developing countries and co-operation between these agencies.

■ Increased Unesco collaboration with regional centres for book development (Asia, Latin America, Africa, Arab States).

■ Action to remedy the serious effects of the world paper crisis on the development of education, science and culture in the countries of the Third World (in co-operation with other U.N. organizations).

GLOBAL AND NATIONAL INFORMATION NETWORKS

Two major Unesco projects will reach their operational stage: a world-wide network of scientific and technical information (UNISIST) and a programme to assist Member States in improving their national information systems so as to draw full benefit from international networks (NATIS). Scientists and technologists in the developed and developing countries today face a mounting tidal wave of information, studies and reports on many subjects from all parts of the world. They can only have proper access to and make use of this accumulated mass of information if it is systematically processed, stored and exchanged at national and world levels. Two Unesco sectors (Sciences and Information) are currently engaged in this task.

may develop between the other organizations I have mentioned, since it is not only a welcome source of enrichment of international thought and action, but is indispensable for the satisfactory operation of the whole U.N. system, indeed for its very existence...

The United Nations General Assembly is to examine in 1975 the problem of the overall co-ordination of the institutions of the United Nations system and their respective roles, with a view to improving the system's ability to satisfy the needs of the international community as effectively as possible.

Having for many years carried out major programmes in close collaboration with other U.N. Specialized Agencies and organizations (1), Unesco will collaborate fully in all efforts aimed at better co-ordination between the parallel activities of these organizations. I shall do my utmost to increase Unesco's co-operation with its sister agencies in every way.

The problems of aid to development, so often associated with Unesco's operational activities, are also now taking on new dimensions. The debate on a new international economic order, begun at the sixth special session of the United Nations General Assembly, has already led to extremely interesting discussions in the Economic and Social Council, and will be the subject of the special session of the United Nations General Assembly in September 1975, thus gaining fresh scope and a new quality.

Here we are no longer concerned with operational action or aid to development, in the traditional meaning of these terms, but with problems affecting all mankind. It is for this reason that we should speak of co-operation for development rather than aid to development. Indeed, the international crisis in energy sources has demonstrated the vulnerability of the developed countries and the interdependence of all countries, whether regarded as developed or developing.

Unesco must be able not only to participate in this debate, within the United Nations or elsewhere, but also to contribute to it the wealth of experience it has accumulated over the three decades of its existence.

Co-operation for development is a daily fact of the Organization's life and there can be no question of halting current operations on the grounds that there is need for reflection with the idea of reorganizing the programme. Two parallel and simultaneous activities are called for: we must do all we can to formulate new objectives and new means of co-operation for development and we must carry out current projects and programmes as efficiently as possible...

It is commonly said that development is an integrated process, a many-faceted enterprise in which efforts must be brought to bear on several fronts simultaneously. But in the past, we have been unable or unwilling to draw the logical operational conclusions from this self-evident fact, namely that if development is an integrated process, the financing and fields of action of programmes of co-operation for development should also be integrated.

Among the many fields of action in development, probably the best example is that of rural development programmes. For rural development means the development of education, agriculture, roads, cottage industries, distribution networks, water supply systems, a system of credit, a health service, etc. Are there in fact any areas of human activity that are not part of rural development?

The same is true of financing. During recent decades, each of the international or bilateral financing bodies has painstakingly established its criteria for financing and has selected the types of activities for which it provides support. This specialization, the at times unduly rigid choice of criteria and the over-compartmentalization of different activities may curb the introduction of new approaches and new procedures for co-operation for development.

So we should carefully examine the real content of development and study the areas in which co-operation for development is possible and desirable, distinguishing them from those which should be the responsibility and the result of national efforts. The aim is certainly not to establish new restrictive criteria in addition to those I have just mentioned; on the contrary, it is to identify openings which will yield maximum results with modest resources.

And here I wish to emphasize two things: Unesco is not founded on a theoretical universality; it also exists to serve its Member States, each of its Member States. It is essential that each Member State—rich or poor, industrialized or aspiring to be so, in northern or southern hemisphere, in east or west—should be able to find a place in the Organization and to receive from it all the services which it is entitled to expect.

Aid to development, then, in spite of its importance, is only one aspect of Unesco's action. As Assistant Director-General for Education, it became clear to me that we could also render useful services to the industrialized countries by offering them our vast experience of the problems in our fields of competence with which they are confronted daily.

Moreover—as I shall always emphasize—development poses problems, however different they may be, to all countries. It is time that we geared our action accordingly and it is also desirable that the industrialized countries bring more of their problems to us so that together we may work out new forms of co-operation.

■ ***Amadou Mahtar M'Bow***

(1) In particular the United Nations Children's Fund, the Food and Agriculture Organization, the International Labour Organization, the World Health Organization, the United Nations Development Programme and the World Food Programme.

FIGHTING RACISM AND RACIAL PREJUDICE

■ **Preparation by Unesco of a Universal Declaration on race and racial prejudice.**

■ **Increased aid to refugees and other peoples fighting for liberation from colonial domination and all forms of apartheid.**

■ **Inquiry into administrative obstacles which prevent different racial and ethnic groups from taking part in community life.**

HUMAN RIGHTS PEACE DISARMAMENT

■ **Greater participation of Unesco Clubs and Associations, Associated Schools and Unesco National Commissions in the promotion of human rights.**

■ **On 10 December, anniversary of the Universal Declaration of Human Rights, a Human Rights and Peace Day, aimed particularly at young people, will publicize the concepts underlying human rights.**

■ **International seminar on education for peace and respect for human rights at primary and secondary levels.**

■ **Series of studies on basic concepts for reinforcing peace between countries and peoples in the modern world.**

■ **Study on the causes of violence.**

■ **Studies on the role of international organizations in promoting peace.**

■ **Research programme on the economic and social consequences of disarmament (in co-operation with the United Nations).**

■ **Bibliography on the main trends revealed by studies on the dangers of modern armaments and techniques of warfare to man and his environment.**

■ **International peace forum, "The Social and Human Sciences and the Problem of Peace", in which jurists, economists, anthropologists, historians, sociologists, psychologists, and young people will take part.**

Photo © APN, Paris

This huge industrial plant for extracting gold operates on the river at Alixerov, in the Magadan region of the Soviet Far East. Processed rock is dumped in the huge mounds seen in foreground. The discovery and tapping of new mineral deposits on a global scale poses major geological and technological problems calling for international co-operation. Unesco has taken the initiative in this direction by launching in 1972 the International Geological Correlation Programme which is undertaking a wide range of operations, including investigations of the earth's crust and of mineral resources on the continents and the sea bed.

OUR HIDDEN MINERAL RESOURCES

An Eldorado beneath the oceans and in every kind of rock

by Konstantin I. Lukashev

MANKIND will need more mineral resources in the next half-century than in the whole of its previous history. This applies to all types of minerals but particularly to fuels and to rare metals and elements. In many of the modern alloys and materials used in industry and science, many different constituents are added to the basic metals, including large quantities of rare elements.

Many kinds of minerals, occurring in large deposits, are being rapidly exhausted or in some cases have already been exhausted. This is especially true of iron ores, manganese, chromium, nickel, copper, lead, zinc, gold, silver and platinum.

Fewer deposits of metallic and non-metallic minerals are being discovered near the surface and at depths of two or three kilometres. Prospectors are concentrating more and more on deeper levels of the earth's crust. ▶

KONSTANTIN I. LUKASHEV, *Soviet geologist and mineralogist, is director of the Institute of Geochemistry and Geophysics, in Minsk (Byelorussian Soviet Socialist Republic). He is the author of more than 250 publications on geology, economic geography and related subjects, and is a member of the Academy of Sciences of the Byelorussian SSR. A fuller version of this article originally appeared in Unesco's quarterly "Impact of Science on Society" (July-September 1974). Annual subscription : 28 F. Per copy : 8.50 F.*

In theory, contemporary science and technology could make it possible fully to satisfy the world's material needs. In practice many social, geographical, technical and other difficulties will have to be overcome before these needs are filled.

Information on world mineral stocks is not complete even for the major metals and minerals used in industry. Many developing countries recently freed from colonial rule are only beginning to prospect and assess their own mineral wealth while information on deposits and reserves of ores, petroleum and gas at depths of more than three kilometres is also very inadequate.

According to rough calculations, the bulk (65 per cent) of known deposits of various kinds of minerals consists of low-grade ores, with only a very small proportion (5 per cent) of high-grade ores.

The resources of the United States, Japan, the Federal Republic of Germany, the United Kingdom, France and other Western European countries are not sufficient to meet their requirements.

The United States of America, for example, has adequate supplies of coal, gas, phosphates and molybdenum but is dependent on imports for the bulk of its supplies of manganese, chromium, nickel, mercury, tin, cobalt and other metals and minerals. Japan is completely dependent on imports for its oil, iron ore, chromites, nickel, cobalt, molybdenum, bauxite, tin, potassium salts and phosphates.

The Federal Republic of Germany imports 55-85 per cent of its supplies of copper, manganese, mercury, lead, tungsten and zinc, the only minerals which it is not obliged to import being coal and potassium salts. The United Kingdom is able to supply its entire natural gas needs from domestic sources and has been supplying 90 per cent of its own coal requirements. While France is rich in iron ore, potassium salts, bauxite and some other useful minerals, it is obliged to import many others.

The Soviet Union is better provided than other countries with mineral resources, having large deposits of coal, oil, gas, iron ore and non-ferrous metals.

■ **Energy Resources.** Of all the possible sources of energy—fossil fuels, atomic power, solar energy, hydraulic and wind power, and geothermal energy—the most widely used have hitherto been coal, oil and gas. What energy resources will mankind have at its disposal at the beginning of the twenty-first century and what

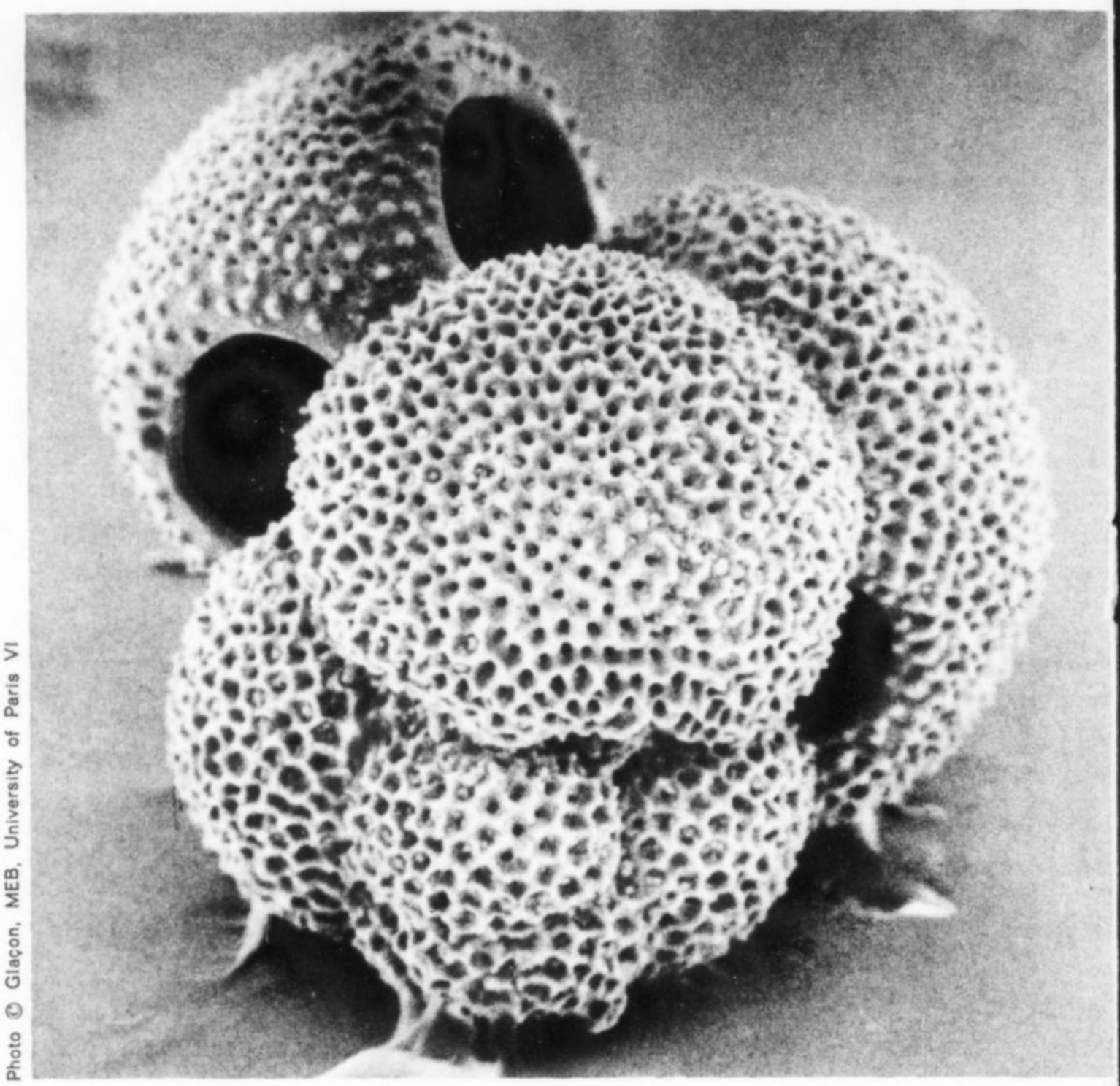


Photo © Glaçon, MEB, University of Paris VI

TAPPING UNDERSEA OIL

To meet the world's rising demand for oil, man is now prospecting and exploiting new sources under the sea. Huge concrete structure, below, under construction in Stavanger Fjord, Norway, is protective casing of a 160,000 m³ deepsea tank for storing output of a North Sea oil-field. The 100-metre-high structure has since been towed about 300 kms out to sea close to the drilling site, where it is now grounded on the sea bed with about 30 metres protruding above the water, ready to provision tankers anchored nearby. Perforated casing will blunt the force of heavy seas. Study of fossil microscopic marine organisms like the one shown above, 0.8 mm in diameter, helps scientists to date geological layers during oil prospection. Right, three aqualung divers are lowered from a drilling rig in the Gulf of Gascony, off the French coast, for underwater inspection.

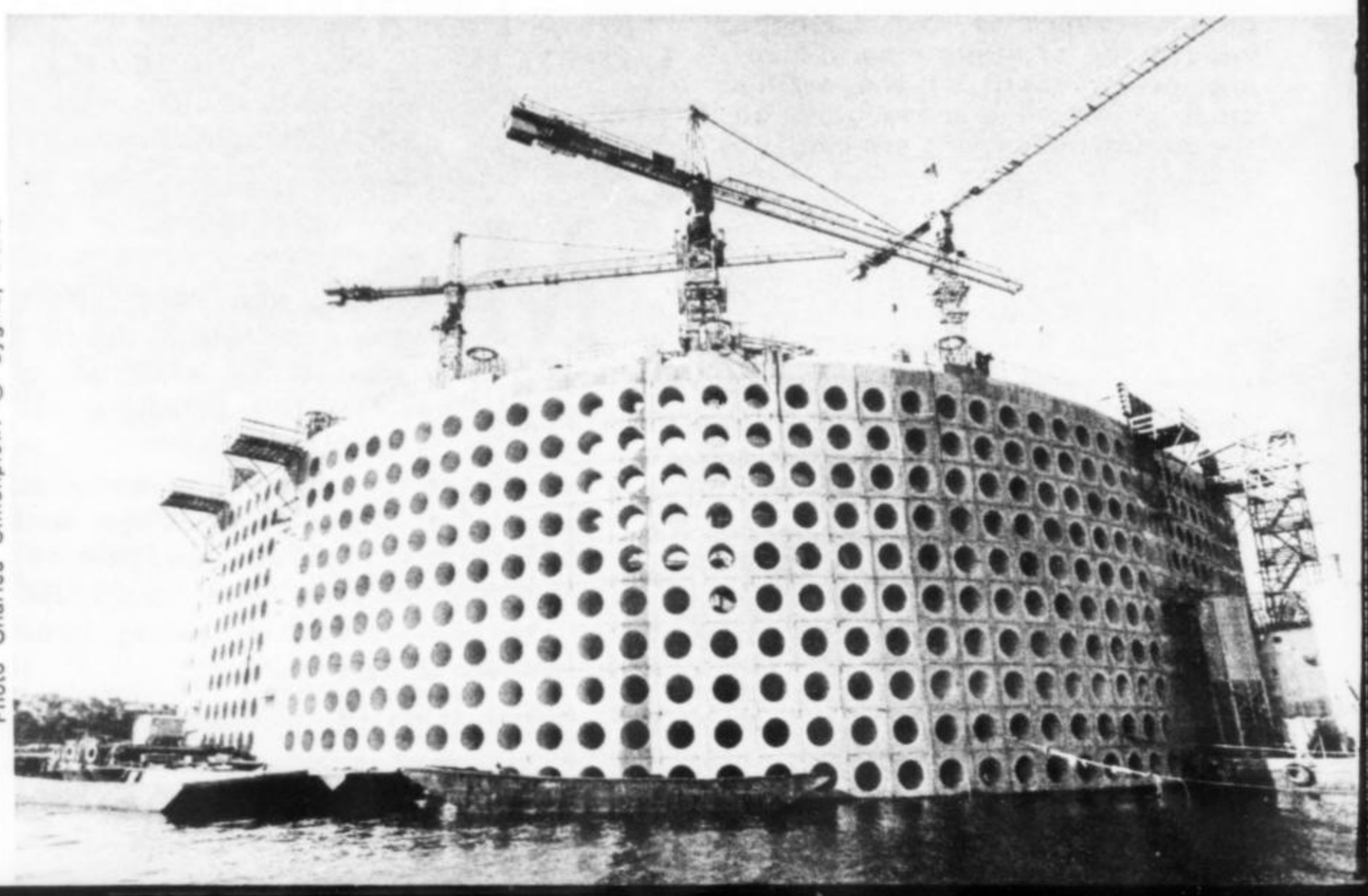


Photo Charles Simonpietri © Sygma, Paris

Photo Serge de Sazo © Rapho, Paris

scientific and technological progress is to be foreseen in the utilization of these different resources?

World supplies of coal, which is a very important raw material in the manufacture of synthetic products, are assured for the next 150-200 years. For world reserves of bituminous coal and brown coal at economically workable depths (up to 1,800 metres for coal and 600 metres for brown coal) the most often quoted estimate is 16 trillion tons (1 trillion = 10^{12}). Towards the end of this century, prospecting for further deposits at great depths, particularly in developing countries, may well raise this estimate to one of 30 or 40 trillion tons.

Known world supplies of oil amount to 85.5 billion tons, including 14.8 billion tons in sea bed deposits. These figures could be multiplied by three or five to allow for deposits which may be discovered before the turn of the century.

Known world reserves of natural gas, according to the same calculations, amount to over 50 trillion cubic metres, including almost 7 trillion cubic metres in sea-bed deposits.

Coal, oil and gas will probably be the main sources of energy until the end of this century. But extraction of oil and gas is increasing very rapidly and, if present trends continue, supplies of these extremely important fuels will be exhausted in a matter of decades—even allowing for the discovery of new deposits and improved extraction coefficients. We might recall that Mendeleev, the formulator of the periodic table of elements, once observed that burning oil was like stoking a furnace with banknotes. This applies equally to natural gas.

■ **Other Mineral Resources.** One of the most important tasks facing science and technology in the immediate future, therefore, is to discover ways of using other natural sources of energy. Nuclear energy, solar energy, geothermal energy and energy derived from the wind and water are bound to become increasingly important in the near future.

It is possible that towards the end of the century progress will have been made in harnessing thermonuclear energy, which will mark an extremely important step by science and technology towards solving the world's energy problems. Mankind will then have millions of years of supplies of thermonuclear energy based on hydrogen isotopes obtained from sea water.

If world population estimates for the end of the century (at least 6,000 to 7,000 million) are taken as a basis of needs, production and consumption of metals will have to double. With the development of ferrous and non-ferrous metallurgy in the developing countries, the total world production and consumption of metal may well increase more than twofold but probably not more than threefold. Rough calculations indicate that the world's extraction of iron could rise to a total of 1 billion tons. Extraction of other ferrous and of non-ferrous metals could increase up to tenfold.

The importance of the rare elements is certain to increase steadily in consequence of technical progress. They are essential for the development of modern processes and industries which require extremely strong, lightweight, acid-, heat- and corrosion-resistant materials to be made into articles of small size.

Little in the way of study and prospection has been carried out on ores containing rare elements. The problem of metal ores is therefore highly important and indeed acute for many countries, its solution involving geological, technical and sometimes social factors.

Non-metallic raw materials are more widely used in the economy than ▶

Photo Ian Berry © Magnum, Paris

metals. They are increasingly important to the construction industry, the manufacture of products for use in agriculture, mineral salts, chemical products and so on. The building industry obviously relies on stone and the ingredients for cement, bricks, tiles and insulating materials, while rock salts, potassium salts, sulphur and phosphates are basic raw materials for the chemical industry, and clay, feldspar, talc and other minerals are the basic materials for the ceramics industry. Many minerals and rocks are used in metallurgy and in the manufacture of abrasives, insulators and lubricants.

More than forty kinds of minerals are used by industry. Among the most important are diamonds, asbestos, gypsum, clay, granite, graphite, limestone, minerals containing potassium, sodium and lithium, sand, sandstone, sulphur, mica and phosphates.

It is a curious fact that the world's annual per capita consumption of sulphuric acid exceeds that of sugar and that the petroleum and petrochemical industries are to a large extent dependent on barite and bentonite clays for use during drilling and on fluorite, salt, sulphur and various clays for the refining process.

■ **Future Sources of Mineral Wealth.** There is a preponderance of low-grade ores in the earth's crust. The exploitation of these ores is likely to become more important as further technological advances are made. In the nineteenth century only copper ores containing 4 to 6 per cent or more of copper were regarded as paying ores. Now ores with a copper content of as little as 0.4 per cent are considered worth working. Modern methods make it possible to extract zinc, lead, silver, copper, nickel, cobalt, and many other metals from low-grade ores.

The possibility of using low-grade ores will greatly increase our mineral stocks and remove the threat of total depletion of the world's mineral resources for decades.

A substantial proportion of the world's resources of coal, oil, gas, bauxite, rock salts and potassium salts, sulphur and phosphorites occurs in sedimentary deposits. There are good prospects for extracting these minerals from depths of 5-7 kilometres and more.

It has recently been established that vast reserves of mineral wealth lie beneath the seas and oceans of our

A SPARKLE OF DIAMONDS, A WHORL OF COPPER

To produce a handful of diamonds (left) thousands of tons of rocks must be processed. Even in rich deposits, each stone, whether for industrial use or jewellery, may have to be extracted from 14 million times its own weight in rock. Many large deposits of far less rare minerals, such as copper, are today being rapidly exhausted. Right, the whorl-shaped outline of the largest open-cut copper mine in North America, at Bingham Canyon, Utah. From these workings, two miles across from rim to rim, which snake down over 1,000 metres into the earth, more than 180,000 tons of barren rock and 90,000 tons of ore are excavated daily. Some idea of its size is given by lines of trucks and excavating machines seen as tiny dots on different levels.

Photo Georg Gerster © Rapho, Paris

planet. Surveys carried out by scientists in recent years indicate that thousands of millions of tons of manganese, nickel, cobalt, and copper are contained in the iron-manganese nodules which lie on the sea-bed.

The Soviet exploration vessel *Vityaz*, for example, has discovered large accumulations of these nodules at depths of 4-5 kilometres in the central Indian Ocean, covering whole areas of the ocean bed in continuous layers. Reserves of these minerals on the floor of the Pacific Ocean are estimated at 1,656 billion tons, including 358 billion tons of manganese, 207 billion tons of iron, 43 billion tons of aluminium, 25 billion tons of magnesium, 14.7 billion tons of nickel, 9.9 billion tons of tin, and 7.9 billion tons of copper.

Furthermore, it has been calculated that the seas and oceans of our planet contain more than 20 million cubic kilometres of salts, a truly colossal figure. Sea water also contains varying quantities of iron, gold, copper, nickel, cobalt, manganese and other elements.

If all the gold contained in sea water could be extracted and divided equally between all the earth's inhabitants, there would be more than a ton for each of us! And there is twenty times more silver, thirty times more thorium and molybdenum and a thousand times more iodine in sea water than there is gold. The oceans are indeed a veritable Eldorado. But a satisfactory way has yet to be found of extracting rare elements from sea water.

In the long run, technical progress may make it possible to extract the essential minerals from any kind of rock. Every 100 tons of ordinary magmatic rock (granite, for example) contains on average 8 tons of aluminium, 5 tons of iron, 540 kilogrammes of titanium, 80 kilos of manganese, 80 kilos of chromium, 18 kilos of nickel, 14 kilos of vanadium, 4,5 kilos of tungsten, 9 kilos of copper, 1.8 kilos of lead and a quantity of uranium and thorium capable of producing as much energy as 50 tons of coal.

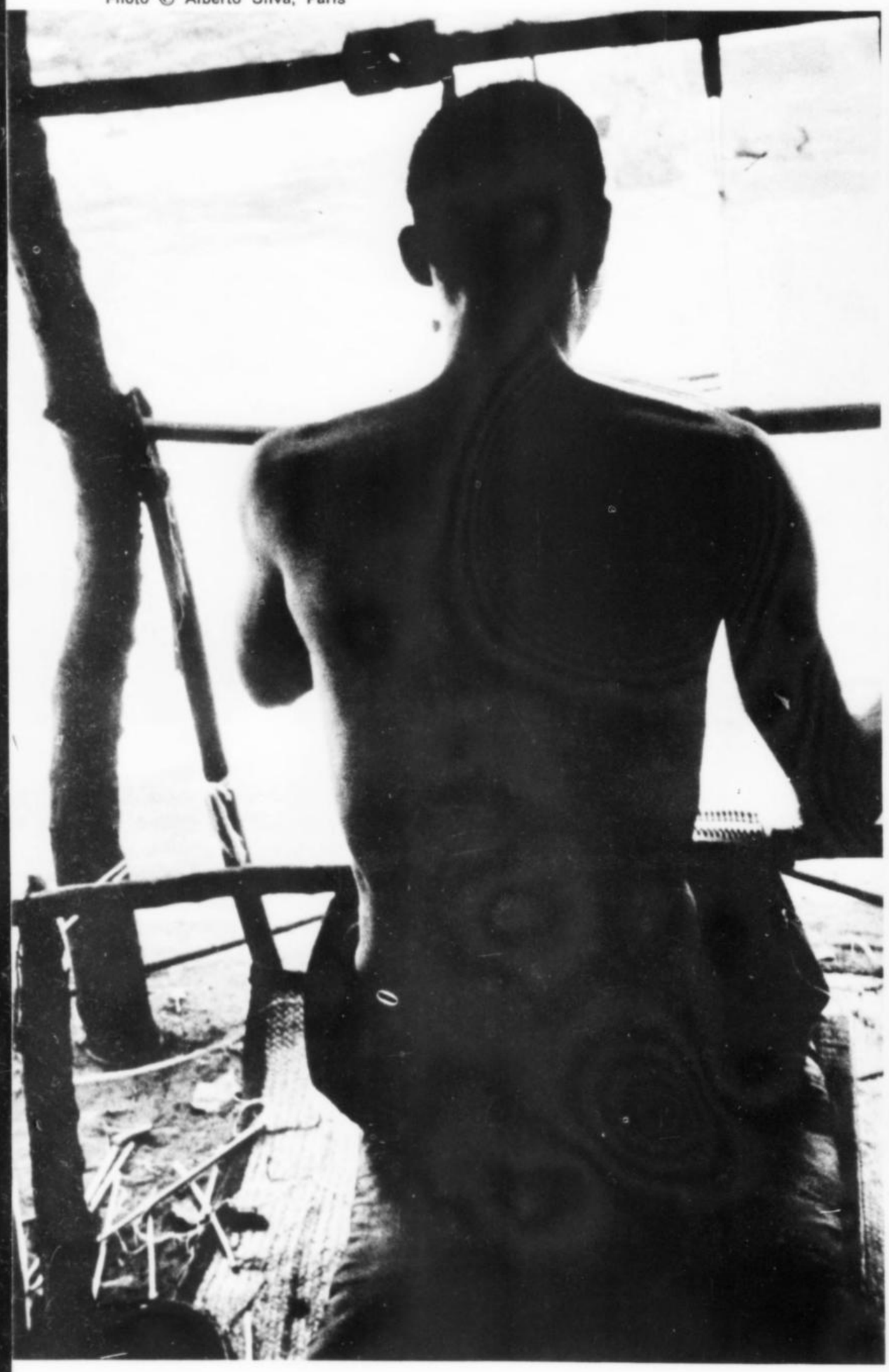
If man could devise a method of extracting chemical elements from all the different kinds of rocks, he need never lack mineral resources. It is my belief that in time mankind will solve this problem and will look on all rocks as ores.

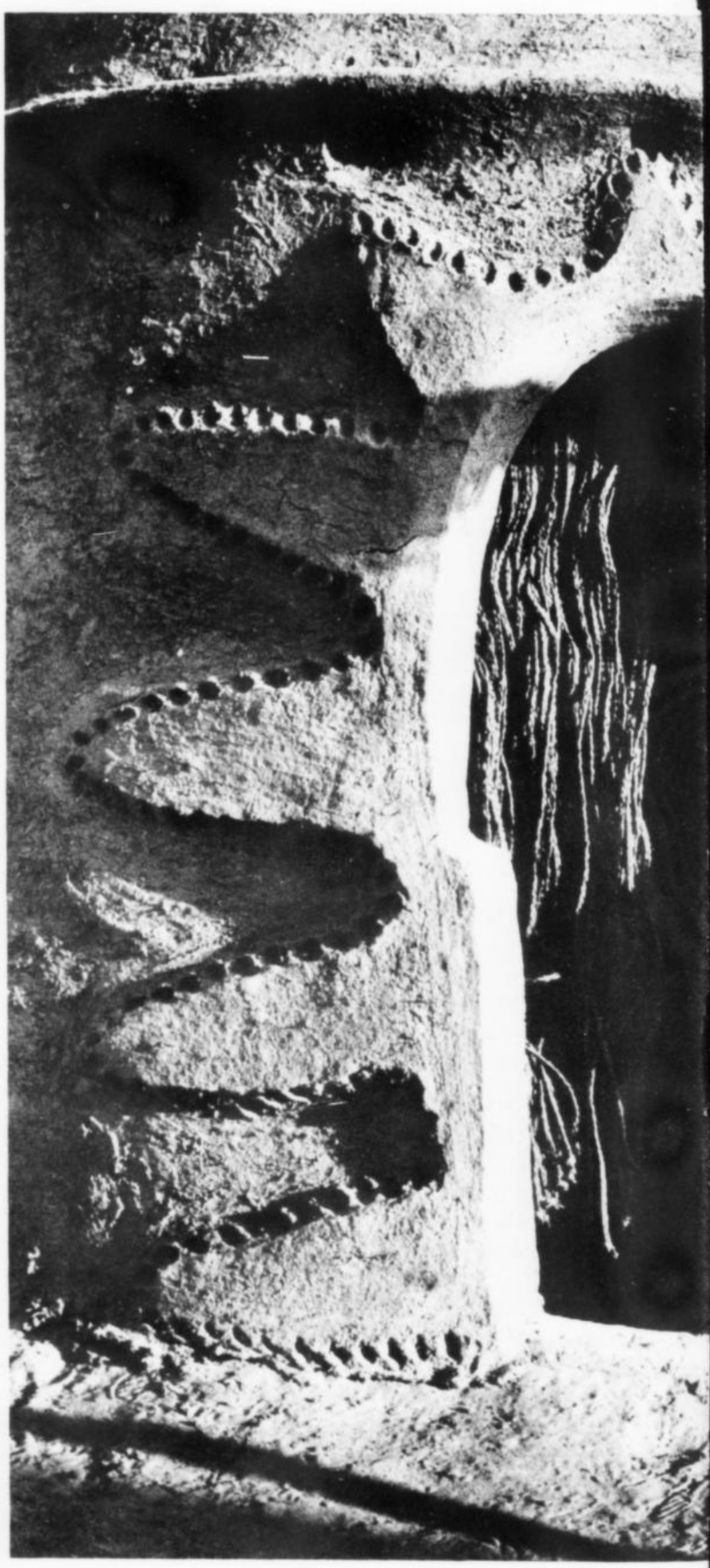
■ ***Konstantin I. Lukashev***

A YOUNG NATION BUILDS A UNIQUE OPEN-AIR MUSEUM

The wealth of Niger's traditions crafts and wildlife in an unusual setting

Photo © Alberto Silva, Paris





The National Museum of Niger, at Niamey, has achieved a remarkable feat. It has recreated, in the heart of a city on a 24-hectare site, the immense country of Niger (1,200,000 km² in area) in all its aspects: ethnic, cultural, artistic, zoological, botanical, etc. This highly original museum, held up as a model for other newly independent countries, enables over 200,000 visitors each year to discover Niger's national roots and to learn about the country's diversity through contact with its rich cultural heritage and facets of contemporary life. Below left, a weaver at his loom in the great open-air museum stretching around the exhibition buildings. Visitors can watch him as he works with other craftsmen from all parts of the country. Below right, decorated with an incised design, the entrance to a typical village mud hut of the Hausa people of southern Niger. Right, the entrance of the National Museum.

Photo © Hoa-Qui, Paris

Photo © Paul Almasy, Paris

by Pablo Toucet

THE young African nations, whose historical, ethnic and geographical "fabric" is sometimes far from homogeneous, for reasons with which everyone is familiar, feel a need—a strong need—to express their personality and affirm their unity.

Firstly because it is only in the last few decades that these nations have emerged on to the international stage. Secondly because their governments are well aware that the long and arduous task which faces them, and to which they must give the highest priority, is to melt and unite in the crucible of a collective consciousness the ethnic and historic mosaic formed by their different peoples.

In laying the foundations on which the new state of Niger has been built, the government has been employing every means it could devise, including, surprisingly enough, the creation of a national museum.

Four separate yet closely connected operations are simultaneously being carried on by the National Museum of Niger: an ethnological museum; a zoo and public pleasure gardens; a centre for the development of traditional craftsmanship; and an educational and social work project.

These four operations, carefully planned to interlink, have given the Museum an original appearance and made it a dynamic ensemble of activities.

The buildings of the National Museum stand in the very heart of Niamey, capital of the Republic of the Niger, on a beautiful site whose southern section overlooks the broad and peaceful waters of the river Niger.

The great park had been badly neglected and eventually became the city refuse dump because of its proximity to what was then Niamey's only market. Since June 1958 it has been gradually transformed into a series of delightful gardens where today the people of Niamey and tourists stroll in ever increasing numbers. In these surroundings stand the various Museum buildings, whose diversity is one of their chief attractions.

A museum is a means of extending and completing the basic teaching given in schools. However, in our case we were aiming to attract the interest of both educated people and those who are illiterate. Thus we were constantly searching for a highly elusive compromise: a museum that would appeal to the first of these groups without boring the second.

A visit to the ethnological museum is an opportunity for people to return to their past, creating in many cases a new self-awareness.

In Niamey there are many adults with time on their hands and children with no opportunity to attend school. By attracting their interest, the Museum is making a real and practical contribution to the education of children and adults.

Since its foundation, the National Museum of Niger has carefully arranged a collection of many everyday objects used by the people of ▶

PABLO TOUCET, *Spanish archaeologist and museologist, was responsible for planning and building the National Museum of Niger, Niamey, of which he has been curator since 1958. He was previously in charge of Punico-Roman excavations at Utica, Tunisia. Using a new method he had developed for handling ancient mosaics, he succeeded in removing and reconstructing the famous baptistry of Kelibia, a masterwork now in the Bardo Museum in Tunis.*

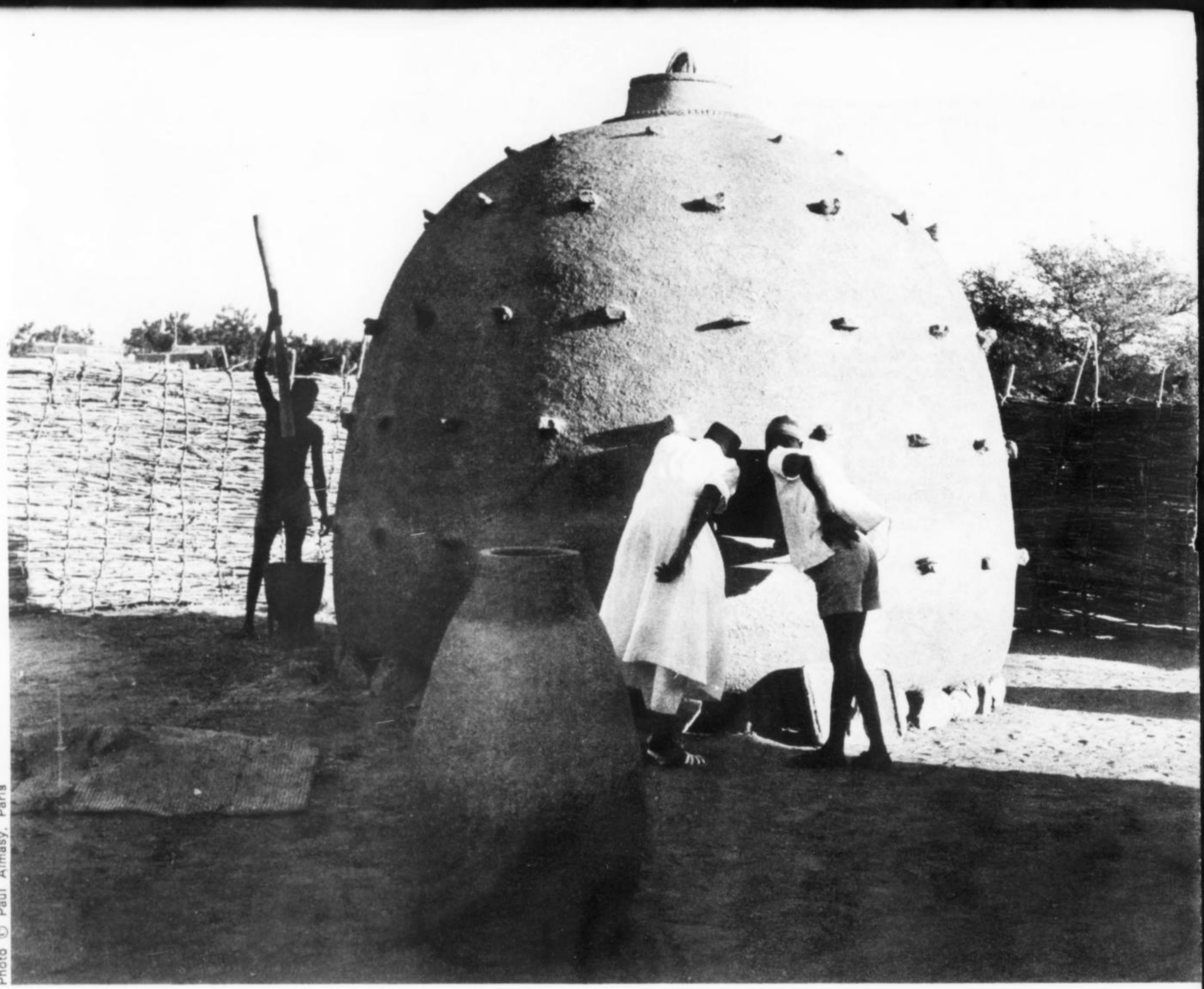


Photo © Paul Almasy, Paris

Niger. These objects are an ethnological treasure trove, not because of their intrinsic value but on account of their authenticity.

Within the Museum grounds are modern buildings whose architecture is inspired by the traditional constructions of *banco* (dried mud), buildings which show that Niger possesses the essential features of an architectural style suited to the country and which can easily be developed and adapted to meet the needs of modern life (see also article page 4).

Different types of dwellings from all over Niger have also been accurately reconstructed in the Museum grounds, so that people can see them without having to travel great distances.

There is a Sorkawa fishermen's encampment, just like those found on the banks of the river Niger during the fishing season. Huts, ovens for smoking fish, nets, fish-traps, harpoons and a canoe give the impression that the camp is actually being used.

Not far away tents with lavish furnishings used by Niger's nomadic tribes have been pitched. There are tents of Toubbou tribesmen from the oasis of Bilma, of Tuaregs from the Air region and from Azaouack in northwest Niger, as well as those of Wogos, Kourteys and Fulani.

The rural homes of the major Hausa, Songhai and Djerma tribal groups have been recreated down to the last detail, comprising buildings, furnishings and the utensils used by families in daily life. These recreations of rural Niger are of great educational value, offering foreign visitors a broad panorama of the country's traditional life and at the same time giving the people of western Niger an opportunity to get to know about the way of life of their fellow-citizens in the distant eastern countryside.

Elsewhere masons have built a house with the famous "Hausa" arches used in a typical type of dwelling of the Hausa people. This style of building is urban rather than rural.

There is also a pavilion of Niger traditional dress, which considerably enriches the Museum's ethnological collection. But the Museum has gone still further by bringing together craftsmen from all parts of the country—blacksmiths, weavers, cobblers, carvers, leatherworkers and potters. This has been done partly to prevent traditional techniques from dying out, but above all so that craftsmen from different tribes, the Djerma and the Tuareg, the Songhai and the Hausa, the Beriberi and the Fulani, can work together, mingling their laughter and their songs.

When the visitor has seen the different traditional costumes and homes, he can watch the craftsmen at work and, if he wishes, take away one of the objects he has seen being made. We do not think that any ethnological museum can do more than this.

In another part of the park visitors listen to traditional songs, legends and historic tales from Niger's distant past, all rendered in the native languages. We believe that there is no better way of preserving a song or story than teaching it to children,

without any kind of compulsion. These songs, in which the Niger visitors sometimes join in, are thus being saved from the oblivion which threatened them.

In a report written after a tour of Africa, South America and Asia, M. de Varine-Bohan, Director of the International Council of Museums, described the Niger as the first country to have made maximum use of a museum to further government efforts to promote national unity.

About 300 boys and girls regularly attend courses given in the Museum's education centre. These boys and girls have been pupils in state primary schools, but at the end of their schooling some have not yet found an opening in the country's economy. And so they have time on their hands, they forget what they have been taught, and become a serious social problem. The school at the Museum is not modelled on the state schools. The primary aim is to encourage the children to retain what they have learned, and so they attend revision classes in languages and mathematics. At the same time they are given a broad training in manual skills which find a ready use in everyday life.

They learn how to build a complete house in *banco:* how to prepare the foundations, make bricks and build walls and roofs, and also how to paint it and install electric wiring, etc.

Among other things they also learn market gardening, how to rear chickens and rabbits, basic mechanics (how to repair light motor-cycles and bicycles), and traditional pottery.

The girls also attend revision classes and learn sewing and cooking. The cookery taught is based on foods produced locally, the aim being to work out nutritionally well-balanced menus. They also learn hygiene and child care.

By the end of their time at the Centre these boys and girls have learned many useful skills. They also come to realize the importance of manual work, unlike some young people in cities who tend to despise it.

In October 1971, the National Museum, using its own resources, began to work on behalf of the blind and physically handicapped. Initially these persons were housed in a straw hut.

Most of the handicapped were beggars, and the aim was to make them capable of earning a living. This meant providing for all their needs, including food, clothing, transport, and training, including special exercises in order for them to acquire manual skills.

Today over a score of blind and handicapped persons are housed in a specially constructed building and are taught by two young instructors who have graduated from the craft training school. Each blind person works with a spastic person, and this teamwork is producing good results.

We have made no attempt to imitate the fine museums of Europe and elsewhere. Instead, we have planned and created a museum in keeping with our resources. It was originally conceived for the people of Niger, but we have since found that Europeans enjoy visiting it as much as Africans.

Several other African states have expressed their intention of setting up similar museums. By launching this pioneering cultural enterprise, we have shown our fellow African countries that it is possible to create a museum without spending vast sums on buildings and running costs.

■ ***Pablo Toucet***

The regional diversity of the Republic of the Niger is outstandingly displayed and explained at the country's national museum in Niamey. All the different types of traditional dwellings have been scrupulously reconstructed in the open air: nomads' tents, fishermen's huts, and town and village homes from the mosaic of regions that form Niger. Left, a "boua", a millet granary of a kind found in Songhai villages in western Niger. This highly functional construction of "banco" (worked clay and straw) has an opening a metre above ground level. The grain is poured through a vent in the dome, which is covered with an enormous straw hat known as a "boua bata", affording protection against sun or rain. Below, in the museum's zoo, where virtually all Niger's animal life is represented, a hippopotamus accepts a little snack from admiring visitors.

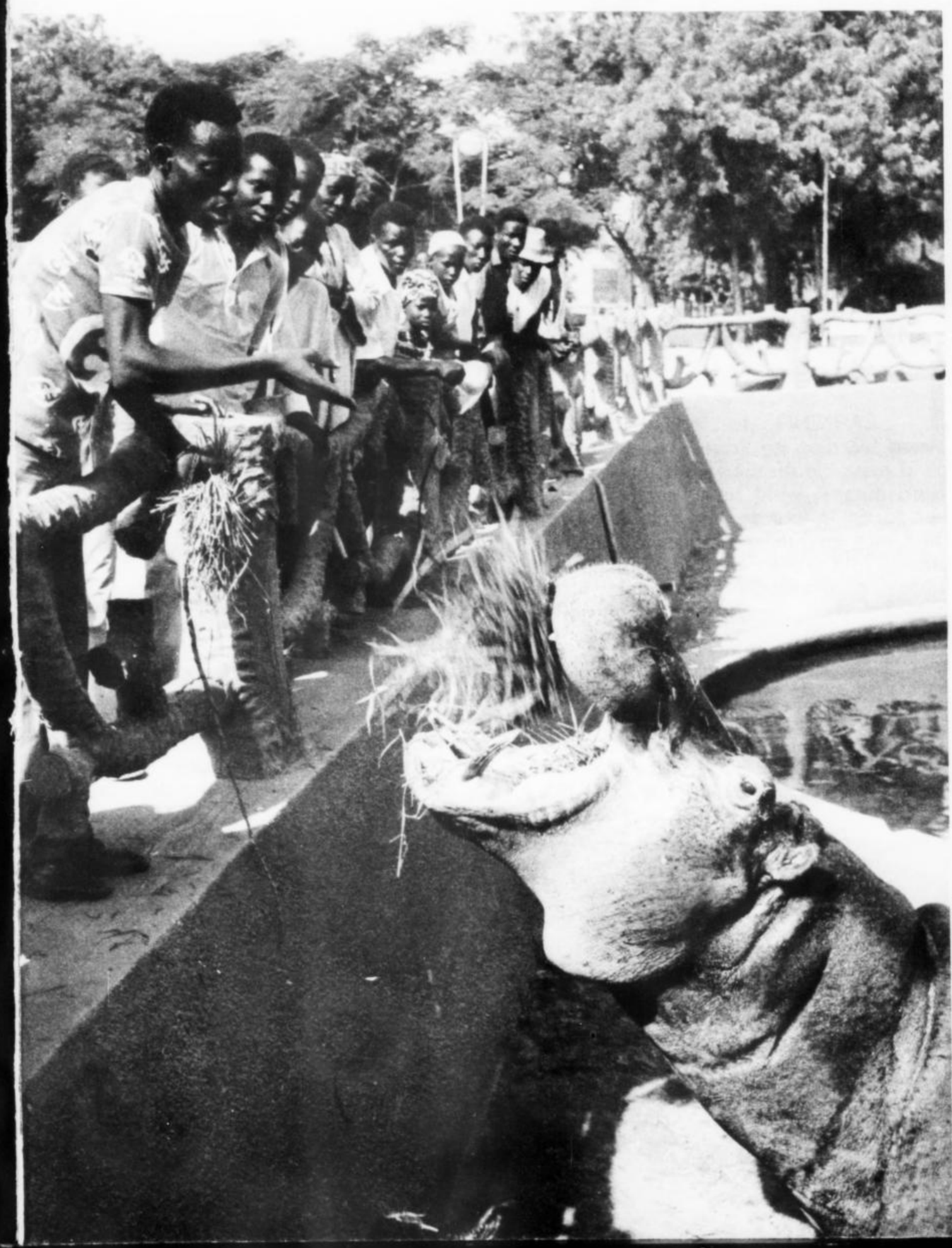
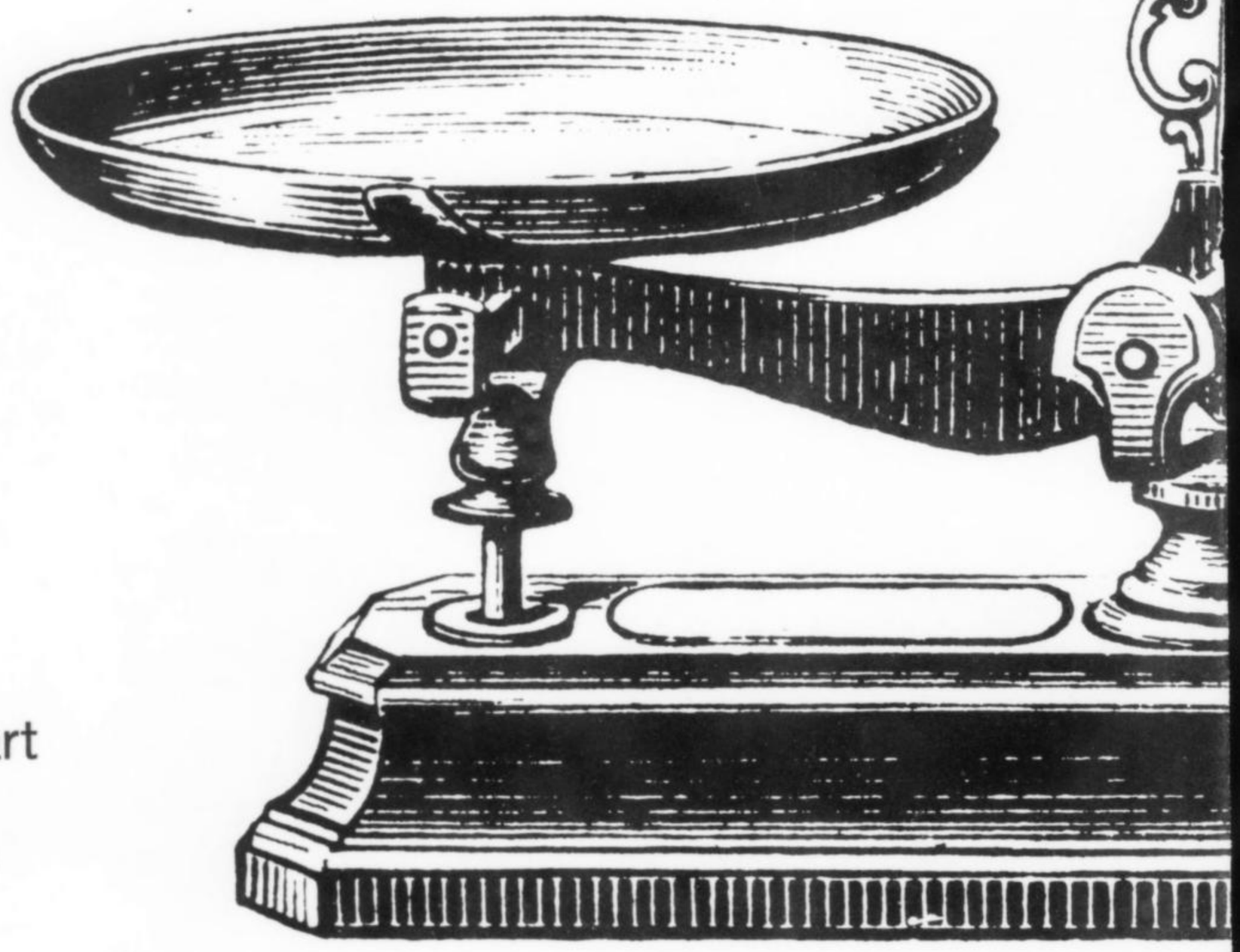


Photo © Naud-A.A.A., Paris

ON TRANSLATION

by Octavio Paz



The noted Mexican writer reflects on the delicate art of striking the right balance

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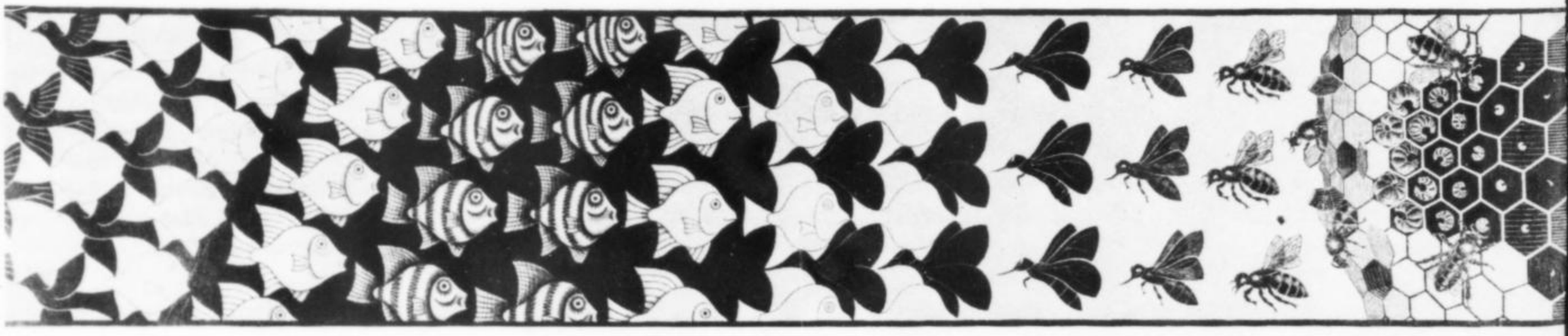
OCTAVIO PAZ, *Mexican poet, essayist and translator, is one of the outstanding writers in the Spanish language. He has been Mexico's ambassador to India, and has taught in several universities, including Cambridge (U.K.) where he was Simon Bolivar Professor of Latin-American Studies. He has published several volumes of poetry, including "Libertad bajo palabra" (Liberty on parole). English translations of his essays include "Labyrinth of Solitude " (1961), "Claude Lévi-Strauss: An Introduction" (1972) and "Alternating Current" (1973). An anthology of his translations of poetry into Spanish (" Versiones y Diversiones ") was published in 1973.*

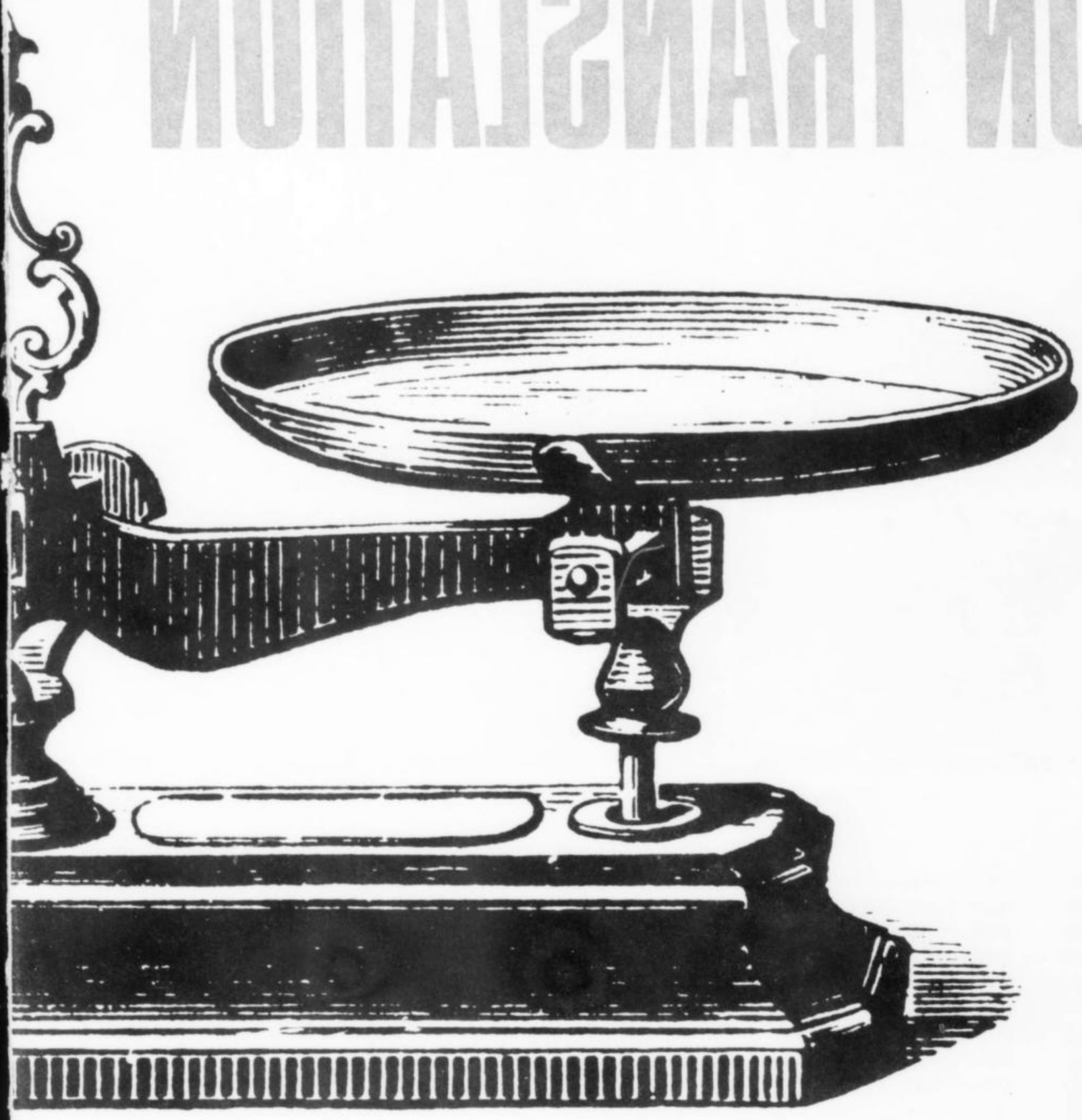
LEARNING to speak implies learning to translate. When a child asks his mother what this or that word means, what he is really asking her to do is to translate the unknown term into language that he can understand. In this sense, translation within a language does not differ basically from translation into another language. The history of every people re-enacts this childhood experience. Even the most isolated tribes at one time or another come up against the language barrier of some alien group.

The sounds of a foreign language may cause us wonder, anger, loathing or amused perplexity, but soon make us think about our own form of speech. Language then loses its universal character and we become aware of the existence of other tongues, each of them strange and unintelligible to the others.

In the past, translation dispelled any doubts we might have entertained. Even if there was no single universal language, languages nevertheless formed a universal society in which everyone could understand one another and communicate, once certain difficulties had been overcome. Communication was possible because



ON TRANSLATION



whatever the language, people everywhere spoke about the same things.

This universality of the mind was the answer to the confusion of Babel. There may be many languages but they have meaning in common. For Pascal the very multiplicity of religions constituted a proof of the truth of Christianity. Translation offered the ideal of universal intelligibility to counterbalance the diversity of languages. Thus translation was not only an additional proof of the unity of mind but also a guarantee of that unity.

The modern age has destroyed that security. When man rediscovered the infinite variety of temperaments and emotions that existed, and became conscious of the multiplicity of customs and institutions in the world, he stopped seeing himself in other men.

Until that time the savage had been an exception that had to be eliminated through conversion or extermination, by baptism or by the sword. The savage who made his appearance in the eighteenth-century salons was a new type of creature. Even when he spoke the language of his hosts to perfection, there was a residual strangeness about him. He was not a candidate for conversion but a sub- ▶

Below, detail of *"Metamorphosis II. 1940"*, a work by the well-known Netherlands engraver Mauritz Cornelis Escher. In this masterly feat of graphic transformation, the artist imperceptibly changes bees into birds by way of fish. Opposite page, the same engraving reversed.

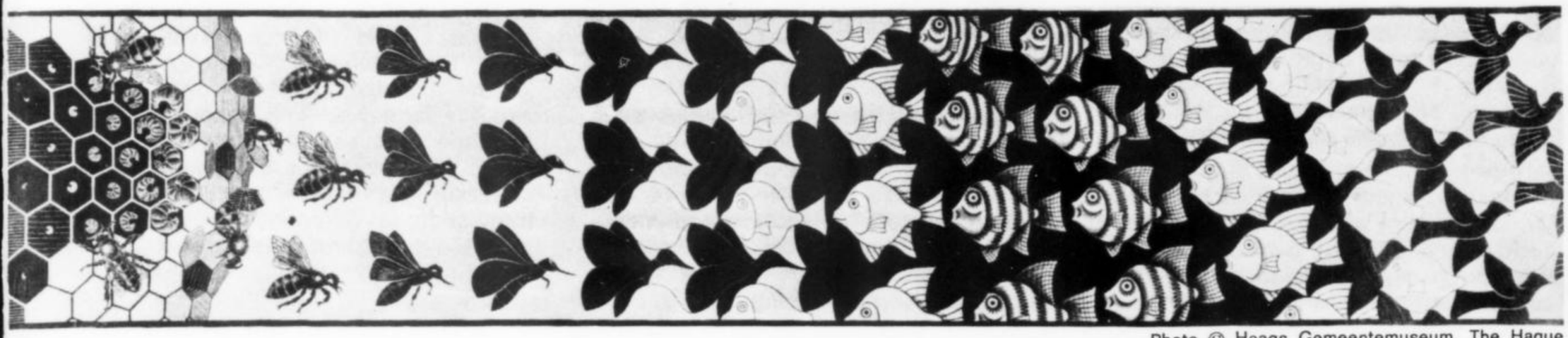


Photo © Haags Gemeentemuseum, The Hague

Velazquez

Goya

ject for dispute and criticism. The originality of his judgements, the simplicity of his customs and the very violence of his emotions were proof of the folly and vanity, if not the infamy, of baptism and conversion.

Then things were reversed. The religious search for a universal identity gave way to an intellectual curiosity anxious to discover differences that were no less universal. Strangeness ceased to be a deviation and became exemplary in a paradoxical and revealing way: the savage now represented civilized man's yearning for the past, his *alter ego*, his lost half.

Translation reflects these changes. It is no longer an operation that tends to prove the ultimate similarity of men everywhere, but has become the vehicle of their individualities. Formerly its purpose was to reveal the likenesses that transcended their disparities; henceforth it shows that these disparities are absolute, whether they reflect the strangeness of the savage or that of our neighbours.

A remark made by Dr. Samuel Johnson while on a journey expresses this new outlook quite cogently. "A blade of grass is always a blade of grass, whether in one country or another," he said. "Men and women are my subjects of inquiry; let us see how these differ from those we have left behind."

Two meanings are implicit in Dr. Johnson's observation and they both foreshadow the twofold path that the modern age was to take. The first concerns the separation between man and Nature, a separation that would later turn into an antagonistic relationship and a struggle between them, with man considering that his mission was no longer to save himself but to dominate Nature. The second implication has to do with the separation between man and man. The world ceases to be one world, an indivisible totality. It is split into Nature and Culture, and Culture is broken up into cultures.

So we have a multiplicity of languages and a multiplicity of societies. Each language constitutes a way of looking at the world, and each civilization is a world in itself. The sun that the Aztec poem glorifies is different from the sun the Egyptians worshipped, even though the astronomical body is the same.

For over two centuries philosophers and historians, and now anthropologists and linguists, have been accumulating proof that the differences between individuals, societies and periods are irreducible. The major division, scarcely less fundamental than the one established between Nature and Culture, is that which separates primitive from civilized peoples. Then come the variety and heterogeneity of cultures.

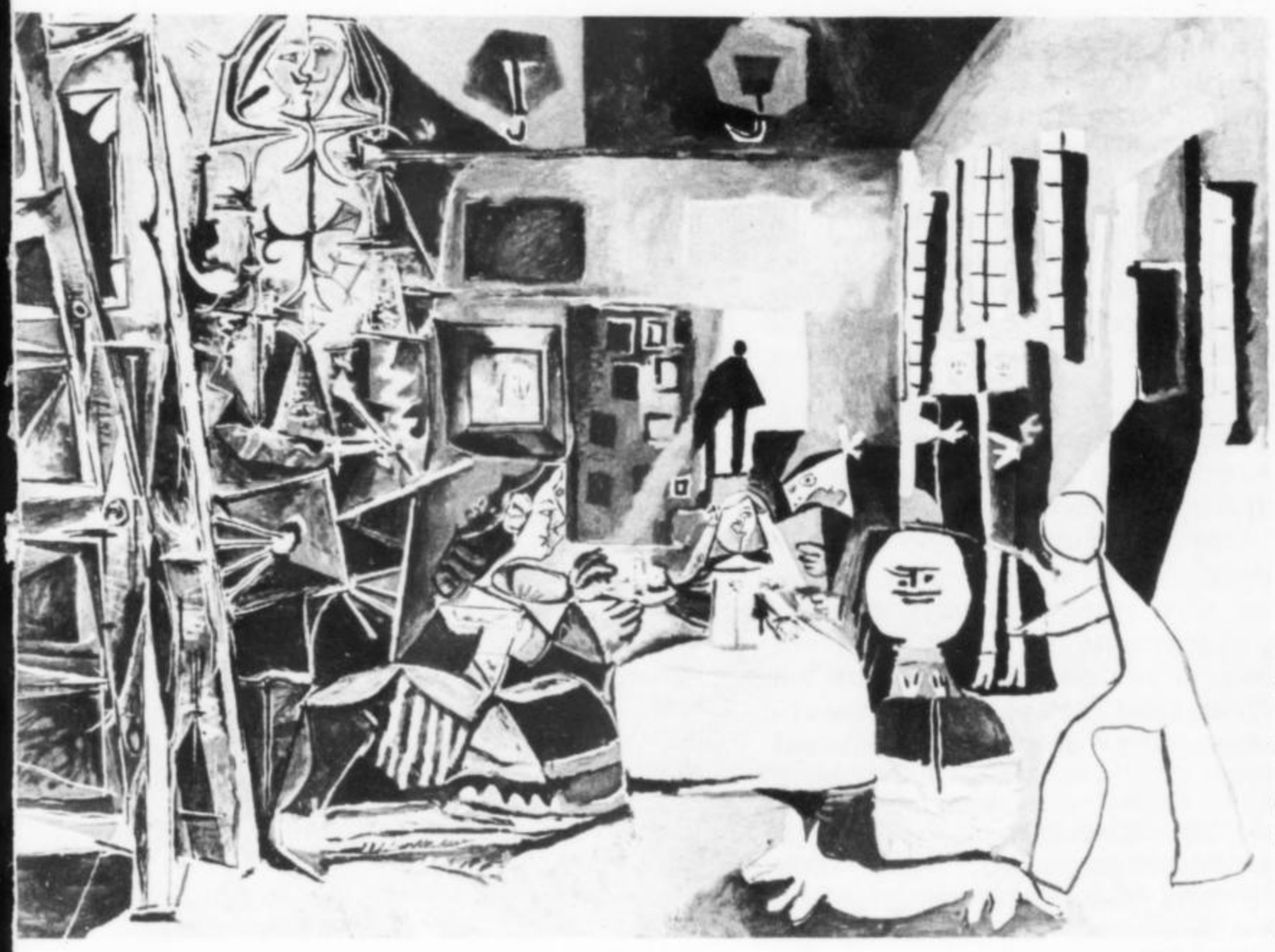
Differences spring up within each culture. The very languages that enable us to communicate between ourselves also confine us in an invisible network of sounds and meanings, with the result that nations become prisoners of the languages they speak. Each language spawns its own divisions in the form of historical epochs, social classes and successive generations. Individuals may belong to the same community, but each one is isolated, walled up alive in his own skin.

All this ought to have discouraged translators, but it has not done so. On the contrary, there is a contradictory and complementary tendency to translate more and more. The reason for this paradox is that, on the one hand, translation does away with the differences between one language and another; and, on the other hand, it brings them into greater prominence, because through translation we become more fully aware of the fact that other people speak and think in ways that differ from ours.

In one sense the world seems to us like a collection of differences, and in another like a pile of texts, each one slightly different from the one before it, resembling translations of translations of translations.

Each text is unique, yet at the same time it is the translation of another text. No text is entirely original, because language itself is essentially a translation. In the first place, it translates from the non-verbal world. Then, too, each sign, each sentence, is the translation of another sign, another sentence. This reasoning may even be reversed without losing any of its force and we may assert that all texts are original because every translation is different. To a certain extent every translation is an original invention and thus constitutes a unique text.

Translation and creation, twin operations in art and literature



Photos © Giraudon, Paris

Picasso

Painting as well as literature offers notable examples of the art of translation. The famous work by Velazquez, *Las Meninas* (Ladies-in-Waiting) painted in 1656 and now in the Prado Museum, in Madrid (far left) was used as an original for works by two equally celebrated artists: Goya and Picasso. About 1780, Goya "translated" *Las Meninas* by transposing it from painting to engraving. His version (centre) is now in the Petit Palais Museum, in Paris. Picasso's "translation" of Velazquez' masterpiece is a bold departure from the original and bears the imprint of his own genius. Left, the first of 45 variations of aspects of *Las Meninas* painted by Picasso in four months during 1957.

What the discoveries of anthropology and linguistics condemn is not translation itself but a naïve view of translation, or in other words literal translation which is significantly referred to in English as *slavish*. It is, of course, possible to translate literally, but this is not translation. It is generally no more than a string of words intended to help us read a text in its original language. As such, it is more like lexicography than translation.

In any event, even in cases where it is only necessary to convey the meaning, as in scientific works, translation always implies a transformation of the original. Such transformation is necessarily literary because translation is an operation that makes use of the two modes of expression to which, according to Roman Jakobson, all literary processes can be reduced, namely metonymy and metaphor.

The original text never reappears in the other language: this would be impossible. Nevertheless, it is always present because, although the translation does not explicitly state as much, it refers to the original text constantly, or else converts it into a verbal object that differs from it, yet reproduces it by metonymy or metaphor. Both of these, as distinct from explanatory or free translations, are strict forms that are not incompatible with exactness. Metonymy is an indirect description; metaphor is a verbal equation.

Poetry has always been considered the form of writing that lends itself least to translation. This prejudice is surprising when we stop to think that many of the best poems in every Western language are translations, and that many of these translations have been made by outstanding poets.

Some years ago Georges Mounin, the French critic and linguist, pointed out that it is usually admitted—grudgingly, to be sure—that the denotative meanings of a text can be rendered into a foreign language, whereas it is almost unanimously held that the connotative meanings cannot.

Poetry contains overtones, reflections and relationships between sound and sense. It is a tissue of connotations, and these are deemed untranslatable. I confess that this view goes against my grain, not only because it conflicts with my conception of the universality of poetry, but because it is based on a false notion of what translation really is.

My ideas are not shared by everyone, however. Indeed, many modern poets assert that poetry simply cannot be translated. But they are perhaps moved by an infatuation with verbal material and have been caught in the snare of subjectivity.

Language becomes a landscape and that landscape in turn is an invention, the metaphor of a nation or an individual. It is a verbal topography in which everything is communicated and everything is translation. Sentences are mountain chains and the mountains are the signs and ideograms of a culture.

But the play of resonances and verbal interrelationships, while intoxicating, conceals a certain danger. Surrounded as we are by words on all sides, there comes a time when we suddenly feel dumbfounded and alienated by the anguish of living with names instead of things. Sometimes it even seems strange to have a name of one's own. Federico García Lorca wrote:

Here amid the bulrushes in the late [afternoon,
How odd that I should be named [Federico!

This experience too is universal. García Lorca would have felt just as strange had he been called Tom or Pierre or Chuang-Tzu. Losing our name would be like losing our shadow, but to be only our name is to be reduced to being a shadow. The lack of conformity between things and their names is doubly unbearable. Either significance disappears, or the things themselves seem to vanish. A world of exclusively abstract meanings is just as unappealing as a world of things devoid of meaning and nameless.

Language is what makes the world livable. The amazement at being named Federico or Sô Ji is immediately followed by the invention of another name, a name which in a sense is a translation of the previous one, the metaphor or metonymy which, without pronouncing it, implies it.

In recent years, owing perhaps to the ascendancy of linguistics, there has been a tendency to minimize the eminently literary nature of translation. Actually, there is no such thing as a science of translation, nor ▶

can there be, though translation can and should be studied scientifically. Just as literature is a specialized function of language, so translation is a specialized function of literature.

But what about translation machines? If these devices one day succeed in really *translating*, they will then be performing a literary operation no different from that which translators now accomplish. They will be turning out literature. Translation is a task in which, apart from the requisite knowledge of languages, what is decisive is the translator's initiative, whether this be taken by a machine that man has "programmed" or by a human being surrounded with dictionaries.

Arthur Waley's words are convincing here: "A French scholar wrote recently with regard to translators: 'Qu'ils s'effacent derrière les textes et ceux-ci, s'ils ont été vraiment compris, parleront d'eux-mêmes.' [Let them efface themselves. The texts, if they have been properly understood, will speak for themselves.] Except in the rather rare case of plain concrete statements such as 'The cat chases the mouse', there are seldom sentences that have exact word-to-word equivalents in another language. It becomes a question of choosing between various approximations . . . I have always found that it was I, not the texts, that had to do the talking." It would be hard to add a single word to this statement.

Theoretically, poetry should be translated only by poets, but in point of fact poets are rarely good translators because they almost invariably take someone else's poem as the starting point for a poem of their own.

A good translator does just the opposite: his aim is to produce a poem that is similar to, though not identical with, the original poem. He only departs from it in order to follow it more closely. A good translator of poetry is a translator who is also a poet—like Arthur Waley—or a poet who is also a good translator—such as Gérard de Nerval when he translated the first *Faust*.

The reason why many poets are unable to translate poetry is not purely psychological in nature—though the cult of self does enter into it—but functional. Poetic translation, as I shall try to show, is an operation similar to poetic creation, except that it is executed in reverse.

Every word has a certain number of possible meanings. When a word is combined with others to form a sentence, one of its meanings is singled out and becomes predominant. Meaning tends to be univocal in prose, whereas one of the characteristics of poetry, as has often been noted, and possibly its chief quality, is that it retains the several meanings of a word.

In reality, this is a property of language in general. Poetry accentuates it, but it is also to be found in everyday speech and even in prose.

Critics have lingered over this disturbing particularity of poetry without noticing that the mobility and indefiniteness of its meanings is paralleled by another equally fascinating particularity, namely the immobility of its signs. Poetry transforms language radically and in a direction opposite to that of prose. In the one case, the mobility of signs coincides with a tendency to establish a single meaning; in the other, the plurality of meanings coincides with the immutability of the signs.

Language is a system of mobile signs which, to some degree, may be interchangeable. One word may be replaced by another, and every sentence can be put in another way (translated). We may say that the meaning of a word is always another word. If we wish to prove this, we have only to realize that each time we ask "What does that sentence mean?" the answer is always a different sentence.

Once we enter into the realm of poetry, however, words lose their mobility and their interchangeability. A poem has many shifting meanings, but the words of a given poem are unique and irreplaceable. To alter them would be to destroy the poem. Without ceasing to be a language poetry transcends language.

The poet, caught up in the whirl of language—which is a constant verbal coming and going—selects a few words, or is selected by them. He fashions his poem by combining them and it then becomes a verbal object made up of irreplaceable and irremovable signs.

THE translator's starting point is not language in motion, which is the poet's raw material, but the fixed language of the poem. It is a frozen language, and yet it is quite alive. His operation is the opposite of the poet's. He is not called upon to forge an unchangeable text with changing signs, but to take that text apart, set the signs in motion again and return them to the language. Up to this point the translator's work is similar to that of a reader or critic, since every reading is a translation, and every criticism is, or begins by being, an interpretation.

Reading, however, is a translation within the same language and criticism is a free version, or more exactly a transposition, of the poem. For the critic a poem is the jumping-off place towards another text, his own, whereas the translator, using another language and different signs, must compose a poem similar to the original.

Thus at the second stage the translator's activity is comparable to that of the poet, but with this important difference: when the poet writes, he does not know what his poem is going to be like; when the translator translates, he knows that his poem must reproduce the poem he has before him.

Translation and creation are twin operations. As the cases of Baudelaire and Ezra Pound show, it is often impossible to distinguish translation from creation. Moreover, there is a constant give and take between them, a continual and mutual creative influence. The great ages of poetry in the West, from the time of its origin with the Provençal troubadours down to our own day, have been preceded or accompanied by the interweaving of various poetic traditions. These cross-currents have sometimes taken the form of imitation and at other times that of translation.

From this point of view the history of European poetry may be looked upon as the history of the mingling of the many traditions that go to make up what is known as Western literature, not to mention Arabic presence in Provençal lyricism or that of haiku and Chinese poetry in modern poetry.

Critics study "influences", but this term is equivocal. It would be better to consider Western literature as a single whole in which the central figures are not national traditions—English, French, Portuguese or German poetry—but styles and trends.

No trend or style has ever been national, not even the so-called "artistic nationalism". All styles have been translinguistic. John Donne is closer to the Spanish poet Quevedo than he is to Wordsworth; there is an evident affinity between Góngora and Marino, but there is nothing except the Spanish language to connect Góngora with the Archpriest of Hita, who in turn is sometimes reminiscent of Chaucer.

Styles are collective and pass from one language to another; written works, rooted in their verbal soil, are unique. They are unique but not isolated, for each of them is born and lives in relation to other works in different languages.

In every period European poets—and now those of the two Americas as well—write the same poem in their several languages, and each of these versions is likewise an original and different poem.

The synchronization may not be perfect, but if we withdraw a bit, we find that we are listening to a concert in which the musicians, playing different instruments and without following any orchestra leader or score, are composing a collective work in which improvisation is inseparable from translation, and invention is closely bound up with imitation. Occasionally one of the musicians launches into an inspired solo. The others soon take their cue from him and then go on to introduce variations, while the original motif becomes lost in the new creation.

■ ***Octavio Paz***

BOOKSHELF

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■ **Virtuous Woman**—Three masterpieces of traditional Korean fiction, translated by Richard Rutt and Kim Chong-un. Korean National Commission for Unesco, 1974. 350 pp.

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OTHER BOOKS

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■ **Folk Tales from Asia for Children Everywhere,** Books One and Two, Weatherhill, New York and Heibonsha, Tokyo (sponsored by the Asian Cultural Centre for Unesco), 1975. (See item this page.)

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UNESCO NEWSROOM

Global pattern of TV traffic

The American share of the world market for TV programmes is declining while British, French and German exports are increasing, according to a recent Unesco report. "Television traffic—a one-way street?" by two Finnish researchers, Kaarle Nordenstreng and Tapio Varis, reveals that American programmes still take the lion's share with estimated sales abroad of between 100,00 and 200,000 programme hours per year. However, American programme exports declined from $100 million in 1970 to $85 million in 1971. The British are the second largest exporter of TV programmes.

Folk Tales from Asia

Folk Tales from Asia (Books I and II), recently published, mark the start of a co-publishing venture to provide Asian children with reasonably priced illustrated books. This co-publishing programme is carried out in co-operation with Unesco by the Asian Cultural Centre for Unesco-Tokyo Book Development Centre. Book i of *Folk Tales from Asia* presents stories from Bangladesh, India, Korea, Iran, Laos, Singapore, Thailand and Viet-Nam. In book II are stories from Indonesia, Japan, Khmer Republic, Malaysia, Pakistan, Sri Lanka, the Philippines and Nepal. The 18 countries participating in the programme will use the English editions to produce editions in their own languages. (See "Bookshelf".)

Order of the Golden Ark

Remembering the Biblical story of Noah, who took a pair of every animal aboard his ark to save them from the Flood, Prince Bernhard of the Netherlands has created the order of the Golden Ark, an award to recognize "special service rendered to the conservation of flora and fauna". Prince Bernhard, a champion of conservation, is president of the World Wildlife Fund.

A future for our past

A recent Unesco television film, "A Future for our Past", shows restoration and preservation work carried out with Unesco aid on monuments and cities in various parts of the world, including Abu Simbel, Philae, Carthage, Florence, Venice, Machu Picchu and Borobudur. This 13-minute 16 mm. colour film is available in English, French, Spanish and Russian language versions. For further information, write to Radio and Visual Information Division, Office of Public Information, Unesco, Place de Fontenoy, 75700 Paris (France).

European Architectural Heritage Year

The Council of Europe has proclaimed 1975 "European Architectural Heritage Year" to mark the culmination of its campaign for the protection of European buildings of historic and artistic merit, launched in 1973. One aim is the adoption of a European charter designed to give legal force to measures for preserving the character of ancient towns and cities and for the adaptation of old buildings to modern uses.

International book award for Japanese publisher

The first international book award honouring outstanding services to the cause of books has been awarded to a leading Japanese publisher, Shoichi Noma, for his leadership in the movement to develop Asian book publishing. The award has been made by the International Book Committee, which groups the principal professional organizations concerned with books. Mr. Noma is the founder of the Tokyo Book Development Centre for Asia, set up following a Unesco conference on book development in Asia, held in 1966.

The world's water problems

Man today depletes or pollutes his fresh water reserves at the rate of 300 cubic kilometres a year. Ways of easing the present water shortage were examined recently by an international hydrological conference at Unesco's H.Q. in Paris. The conference, organized jointly by Unesco and the World Meteorological Organization, reviewed the achievements of the International Hydrological Decade launched by Unesco in 1965. It adopted an ambitious international hydrological programme for the five years ahead, stressing scientific research into the problems of drought and the effects of pollution on water resources.

Protecting the monuments of Cyprus

Monuments and works of art in Cyprus have suffered less than might have been feared from events on the island last year, reports a Unesco mission which made an on-the-spot investigation. The mission found that the castles of Kyrenia and Pathos and the Lala Mustapha mosque in Famagusta have only been slightly damaged. The important mosaics unearthed in Paphos are damaged but not beyond hope of restoration.

Flashes

■ *Tuberculosis is still a major health problem with the number of infectious cases in the world estimated at between 15 and 20 million, reports the World Health Organization.*

■ *Trash from big cities in the U.S.A. alone if burned as fuel could generate energy equivalent to 150 million barrels of oil, according to a recent Unesco study on world energy problems.*

■ *Over 3 1/2 million illiterate persons in Brazil were taught to read and write during nation-wide campaigns organized by Mobral, the Brazilian Literacy Movement, between 1970 and 1973.*

■ *Two conferences on revising history and geography textbooks take place this year under the joint auspices of the Federal German and the Polish National Commissions for Unesco.*

Letters to the Editor

AFRICA'S RAIL PROBLEMS

Sir,

Maaza Bekele suggested worthwhile ideas for improving living conditions in Africa (your July-August 1974 issue on population). Nations on other continents probably could benefit by using some of her thoughts.

Specifically, she suggests, "...a move towards economic co-operation between and among African nations, which together can provide a market large enough to admit of viable trade."

A study of the map of Africa reveals problems. The typical rail line runs from the seacoast to the interior and has few, if any branches. So trade is favoured with overseas nations as connexions to adjoining nations are rare.

Even building important connecting links will not be enough because the existing lines are built to five or six different gauges. Remember that England built the first commercial steam railroad in 1825, but it wasn't until 1892 that the last wide-gauge line was converted to the national standard.

Experience has been the same in other major industrial nations: A national uniform gauge is necessary for speedy and efficient movement of people and goods. Even better is where several adjoining nations use the same gauge.

Henry R. Korman
Longview, Washington, U.S.A.

THE FOUR BILLION POPULATION QUESTION

Sir,

Your "World Population Year", issue answers the question Cain asked, "Am I my brother's keeper?"—"Yes!"

That answer raises more questions.

Grant that the population problem (current world population nearly 4 billion) in all its ramifications, with all its implications has been made clear to every nation, to every community of man.

One nation forbids birth control. That nation's population grows faster than the nation's ability to provide gainful work or food for its people. Must other nations support one nation that will not help itself?

Another nation is rich. Its people eat more than they need. They waste while others hunger. Because they can pay, they use for pleasure resources which poorer nations could employ to produce food. Should the better situated share with those who have not even the basic necessities?

An underpopulated country claims that it must have more men and women to develop its dormant resources. Will the benefits from the development flow equally to all? Or is the call for unhindered breeding a device for perpetuating present extremes of wealth and poverty?

A nation regulates its agriculture and its industry, and its farms and factories do not pollute the air, the water, the soil. Can that one nation, or a consortium of nations take steps to stop another nation's harmful practices?

Each nation insists that it must decide for itself what it can and will do for its people without interference from others.

Your writers on the population problem realize that a nation can hurt itself when it disregards the welfare of others. René Dumont says that change, continuance of acceptable life on this earth "will often require as an inescapable condition the abolition of privileges, and consequently a genuine social revolution."

The only effective way to move nations to act for the common good is through education, persuasion, appeal to immediate as well as to long term self interest. Is there time enough for education to become effective? What else can we do?

While making best use of the time he has, man should think also of the other life with whom he shares the world. In all his concern with survival man acts as if he were creation's most important product.

All that lives is brother to man. When man controls his own numbers, while he encourages the others to multiply, the world will support, and will keep man and his brother.

Rachmiel Forschmiedt
Seattle, Washington, U.S.A.

FRIENDS OF UNESCO

Sir,

Recently we organized a youth club of "Friends of Unesco" whose members are 17 to 30 years old. Our aim is to publicize Unesco's work and to get acquainted with the cultural heritage and the present state of science and education, literature and art of other countries. We do not know much about how similar clubs work in other countries, and would be glad to hear more about the organizations that support the United Nations and Unesco.

Zenonas Gricius
Papile, Kalniskiai
Lithuania S.S.R.

BOTANICAL ENIGMAS OF THE PAMIRS

Sir,

Your article, "Enigmas of the Plant World of Central Asia" (November 1974), on studies by Soviet scientists of the paradoxical botanical wealth of the Pamirs made fascinating reading. The luxuriance of the vegetation in this region is quite astounding.

The author suggested several explanations: ultra-violet radiation, which in the Pamirs is 50 per cent higher than normal; intense solar reaction due to the transparency and dryness of the air; enormous fluctuations in temperature, etc. In my opinion, however, two fundamental causes were omitted, the main one being the extremely high radioactivity of the soil.

Before World War II, French scientists and researchers discovered that application of radioactive substances in carefully controlled doses had important stimulating effects on plant growth. The soil of the Pamirs plateaux must contain a high percentage of silica, and pure silica is extremely radioactive. The second cause, linked to the first, must lie in the very small amount of clay in the soil, for clay and all its derivatives are effective insulators of certain currents and rays—electrical, magnetic, radioactive, etc.

M. Thibaudat
Epinal, France

Sir,

As an engineer and scientist, I read with great pleasure Anatoly V. Pokrovsky's article on the plant world of the Pamirs.

However, I am surprised that the author did not mention the possible role of cosmic rays, which may provide an explanation of these botanical mysteries. Between 2,500 metres and 3,800 metres above sea level, at the latitude of the Pamirs, there must be quite a heavy bombardment of protons and muons, capable of causing other biological effects than those which may derive from the intensification of short-wave or ultra-violet rays in the solar spectrum, or from the purity, transparency and dryness of the air, etc.

In any case, Mr. Petrovsky's absorbing article clearly demonstrates that the work of the Pamirs Botanical Institute is of fundamental importance to the study of world plant biology.

Georges Angerand
Paris, France

LITTLE-KNOWN OCEANIA

Sir,

The "Unesco Courier" has published a great deal on the cultures of various countries and peoples, and rightly so. But what about the peoples of Oceania and their original culture which still holds many a mystery and riddle?

The average reader knows much less about the history and peoples of Oceania than he does about Africa and South America, since both these continents have been widely discussed in popular science books and fiction.

V. F. Nevgod
Kiev, Ukraine, U.S.S.R.

CAMPAIGN AGAINST RACISM

Sir,

I would like to call your attention to a question of current concern which I find deeply disturbing: racism in France today.

Arab workers are the chief victims of this racism. Although latent until a few months ago, it erupted through pressure by certain right wing groups. The situation reached the point where a government minister recently announced that a public information campaign is to be launched to highlight and explain the problem in order to counteract the action of racist groups.

By participating in this campaign and publishing facts and figures you would help people like myself who are in contact with large numbers of workers.

Max Boulet
Paris, France

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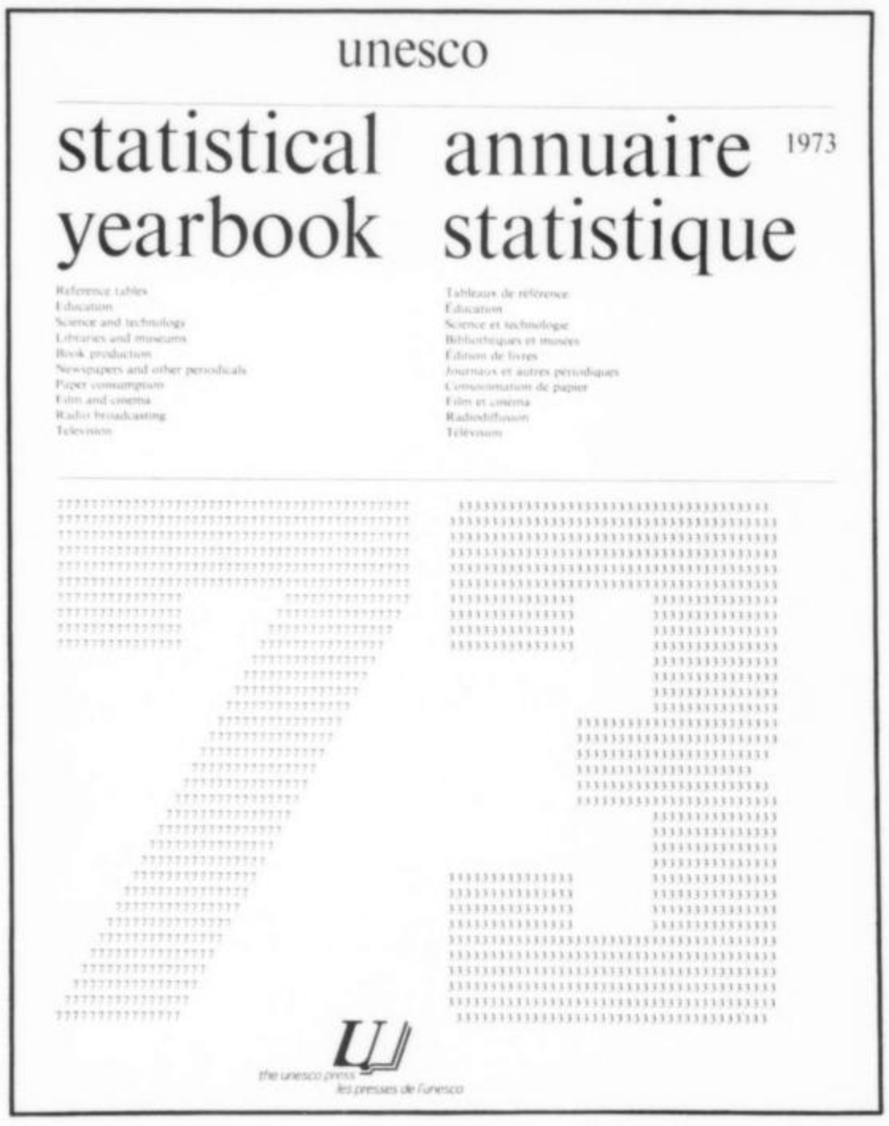

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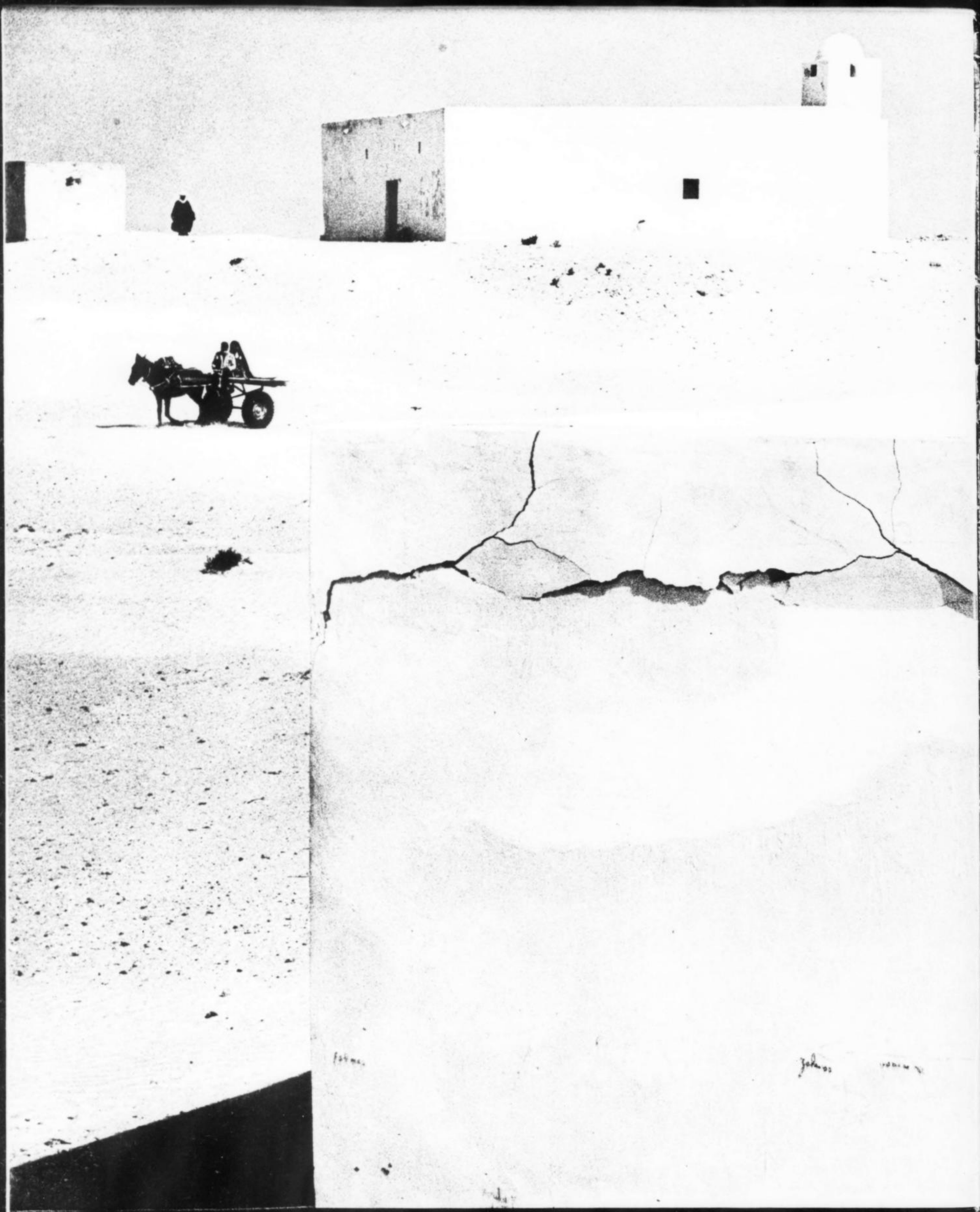

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THE TIMELESS ART OF BUILDING

Square constructions of this type, formerly found only on the small islands off the eastern coast of Tunisia, are today being built in increasing numbers throughout the country (in foreground, wall of house ; in rear, village mosque). Traditional architecture in all parts of the world provides countless examples of buildings in which beauty and functional qualities have been combined harmoniously for many centuries. Unesco has launched a series of studies on these forms of architecture, many of which offer an immense untapped source of inspiration for modern builders. See article page 4.